

ORIGINAL

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION

FILED

FEB 23 1982

H. Stuart Cunningham, Clerk  
United States District Court

BALLY MANUFACTURING CORPORATION,  
Plaintiff,

-vs-

D. GOTTLIEB AND COMPANY, et al.,  
Defendants.

No. 78 C 2246

DOCKETED

FEB 24 1982

DEPOSITION OF PHILIP T. TAI

Taken on

Tuesday, August 25, 1981

#8033

JMS

JOYCE MARIE SAWAYA  
CERTIFIED SHORTHAND REPORTER INC

1025 LINCOLN AVENUE • SAN JOSE, CALIFORNIA 95125 • 287-7500  
2-2400 EAST CLIFF DRIVE • SANTA CRUZ, CALIFORNIA 95062 • 476-6088

HAROLD C. HOHBACH  
ALDO J. TEST  
ELMER S. ALBRITTON  
THOMAS O. HERBERT  
MILTON W. SCHLEMMER  
DONALD N. MACINTOSH  
JERRY G. WRIGHT  
EDWARD S. WRIGHT  
DAVID J. BREZNER  
RICHARD E. BACKUS  
DAVID E. LOVEJOY  
STEPHEN E. BALDWIN  
STEPHEN C. SHEAR  
HENRY K. WOODWARD  
NANCY E. MARTIN  
LOWELL C. BERGSTEDT  
WILLIAM J. EGAN III  
REGINALD J. SUYAT

**FILED**  
APR 13 1982  
FLEHR, HOHBACH, TEST, ALBRITTON & HERBERT  
ATTORNEYS AT LAW

PATENTS, TRADEMARKS AND COPYRIGHTS  
SUITE 3400  
FOUR EMBARCADERO CENTER  
SAN FRANCISCO, CALIFORNIA 94111-4160  
(415) 781-1989

PAUL D. FLEHR  
MARCUS LOTHROP  
BAYLOR G. RIDDELL  
OF COUNSEL

CABLE: FLEHRSF

TWX: 910 372-6669  
FLEHR SFO

PENINSULA OFFICE  
260 SHERIDAN AVENUE  
PALO ALTO, CALIF. 94306  
(415) 326-0747

February 12, 1982

**RECEIVED**  
FEB 23 1982  
H. STUART CUNNINGHAM, CLERK  
UNITED STATES DISTRICT COURT

Joyce Marie Sawaya  
Certified Shorthand Reporter Inc.  
1025 Lincoln Avenue  
San Jose, CA 95125

Re: Bally Manufacturing Corporation v. Gottlieb, et al.  
Our File G-36244

Dear Ms. Sawaya:

Enclosed is the original signed Errata Sheet of February 5, 1982, signed by Philip T. Tai. Would you please attach this to the original deposition of Dr. Tai which was taken August 25, 1982, obtain Dr. Tai's signature on the original deposition, and forward both to the U.S. District Court in Chicago for filing. The correct mailing address for the court is:

United States District Court  
Northern District of Illinois  
Eastern Division - Civil  
219 South Dearborn  
Chicago, IL 60604

Your prompt attention to this matter would be appreciated.

Very truly yours,

FLEHR, HOHBACH, TEST,  
ALBRITTON & HERBERT

  
Donald N. MacIntosh

DNM:dm

Enc.

cc: Dr. Philip T. Tai  
Jerold B. Schnayer, Esq.

## ERRATA SHEET

### Deposition of Philip T. Tai of August 25, 1981

following changes should be made to my deposition taken on August 25, 1981 at the pages and lines indicated:

Page 15  
Line 24 "interphase" should read "interface"

Page 19  
Line 7 "interphase" should read "interface"

Page 24  
Line 24 after "I," add "I"

Page 35  
Line 27 "interphase" should read "interface"

Page 83  
Line 23 after "switches" add a comma and after the word "that" change the period to a question mark so that line 23 will read "on switches, like that?"

Page 83  
Line 24 after "time" add "not" so that line 24 reads "that time not everybody knows how to use it, okay?"

The first sentence of my response beginning at line 22 was my repeating the question. The second sentence of my response was the answer, but the sense of it was obliterated in the typed copy and it should read "It's not what I call -- you know -- at that time not everybody knows how to use it, okay?"

Page 90  
Line 1 the response should be: "No, because to me, drawings like this were standard without knowing the operation of the circuit or its intended application."

By this answer I did not mean that this specific circuit was standard. I meant that drawings of this general type, absent a description of the operation of the circuit and absent any knowledge of its intended application, were known to me at that time.

Date:

Feb 5, 1982

Philip T. Tai  
Philip T. Tai

1 UNITED STATES DISTRICT COURT  
2 NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION  
3

4 BALLY MANUFACTURING CORPORATION, )

5 Plaintiff, )

6 -vs- )

7 D. GOTTLIEB AND COMPANY,  
8 WILLIAMS ELECTRONICS, INC.,  
9 and ROCKWELL INTERNATIONAL  
CORPORATION, )

10 Defendants. )

No. 78 C 2246

RECEIVED  
FEB 24 1982

11 DEPOSITION OF PHILIP T. TAI, produced as a  
12 witness by and on behalf of the defendants, pursuant to  
13 Subpena, taken on Tuesday, August 25, 1981, at the hour of  
14 9:20 a.m., at the law offices of Townsend & Townsend,  
15 5 Palo Alto Square, Palo Alto, California, before JUDITH A.  
16 PETERSON, CSR #1410, a Notary Public in and for the State  
17 of California.  
18

19 A P P E A R A N C E S:

20 For the Plaintiff:

FITCH, EVEN, TABIN, FLANNERY  
& WELSH  
By A. SIDNEY KATZ, ESQ., and  
JEROLD B. SCHNAYER, ESQ.  
Suite 900, 135 S. LaSalle St.  
Chicago, Illinois 60603

24 For the Defendants  
Gottlieb and Rockwell:

ARNOLD, WHITE & DURKEE  
By JOHN F. LYNCH, ESQ.  
2100 Transco Tower  
Houston, Texas 77056

26 For the Deponent:

27 FLEHR, HOHBACH, TEST, ALBRITTON  
& HERBERT  
By DONALD N. MacINTOSH, ESQ.  
Suite 3400, Four Embarcadero Ctr.  
San Francisco, California 94111  
28



INDEX OF EXAMINATION

PAGE

MR. LYNCH

2, 76, 102

MR. KATZ

EXAMINATION BY AP, ILL : 62, 100

Q Purple slate (C) NARS.

Q And I think that INDEX OF EXHIBITS I remember that, Dr.

TAI DEPOSITION NO.:

PAGE

6. Electronics article dated April, 1972 intact - 9 or 10  
that time when the attorneys for Baily involved in this  
litigation, wasn't that right?

 $\Delta$  Y93.

PHILIP T. TAI, being first duly sworn by the Notary Public to tell the truth, the whole truth and nothing but the truth, testified as follows:

A Yes, Mr. Lynch. It's all right.

EXAMINATION BY MR. LYNCH:

Q Please state your name.

A Yeah, Philip T. Tai, T-a-i.

Q Now, you are the same Dr. Philip Tai who gave a deposition earlier in connection with this matter on Wednesday, September 17, 1980?

A Yes, I am.

Q And I took that deposition; do you remember that, Dr. Tai?

A Yes.

Q Now, at that time, you had had some contact prior to that time with the attorneys for Bally involved in this litigation; isn't that right?

A Yes.

Q And since that time, you have had some other contact with those attorneys; isn't that correct?

A Yes.

Q Now, you haven't had any contact with me since that time, since the other deposition, have you?

A No.

Q Have you had any contact with any lawyers from Gottlieb, personal contact?

A No.

Q I'd like you to describe for me, Dr. Tai, what generally occurred between the last deposition in September of 1980

1 and the present time insofar as the contacts that you had  
2 with the attorneys from Bally are concerned?

3 A Between the time of the last deposition and --

4 Q Yes.

5 A Let me think. It's six months.

6 MR. MacINTOSH: John, could you make that more  
7 specific.

8 THE WITNESS: Yes.

9 MR. MacINTOSH: I think the tenore of the deposition  
10 today concerns a declaration which Dr. Tai executed July 17,  
11 1981.

12 MR. LYNCH: I don't think that's right.

13 MR. MacINTOSH: As his counsel, let me tell you  
14 that's how it is.

15 MR. LYNCH: You mean that's all that's going to  
16 be gone into?

17 MR. MacINTOSH: Yes, that's right.

18 MR. LYNCH: Well, if I have to subpoena Dr. Tai  
19 again, I'll do so.

20 MR. MacINTOSH: It is your ballgame.

21 MR. LYNCH: Well, let me understand. You do not --  
22 you will not let me investigate with Dr. Tai the contacts  
23 with Bally?

24 MR. MacINTOSH: Yes, oh, yes. But all as related  
25 to this declaration of July.

26 MR. LYNCH: I'm talking about the contacts with  
27 Bally's attorneys, all contacts.

28 MR. MacINTOSH: Uh-huh.

1 MR. LYNCH: Because what I'm interested in is  
2 what is in that declaration and perhaps what is not in it.

3 MR. MacINTOSH: Uh-huh, right, that's right. So  
4 if I ask you to make your question more pointed --

5 MR. LYNCH: All right.

6 Q BY MR. LYNCH: Well, when was the first time after the  
7 last deposition that you had a contact with any of the  
8 attorneys for Bally?

9 A Oh, I would say approximately four -- about four weeks  
10 ago.

11 Q And what were the -- and between the time of the deposi-  
12 tion and four weeks ago, you didn't have any contact with  
13 them?

A No.

14 Q Now, at the time of the last deposition -- well, what  
15 did they -- what were the circumstances under which you  
16 had a contact with the Bally attorneys four weeks ago?

17 A Would you repeat your question?

18 Q Well, what happened four weeks ago when you had contact  
19 with the Bally attorneys following your deposition?

20 A Oh, the Bally attorneys called me, and there are cer-  
21 tain facts that I mentioned before that I -- I said -- they  
22 asked me, you know, whether I have any local contact with  
23 Atari. So I couldn't grab that, because it is so long, the  
24 salesman's name. You know, Jesse Huffman. And they came  
25 back to tell me, you know, that they found out who that  
26 salesman is, it turned out. And when they mentioned that  
27 name, then it dawns on me, a lot of things that -- you know,  
28 opened up a recollection about some of the things that Jesse

1 Huffman had contacts with Atari. So that's mainly it.

2 Q Now, when they mentioned the name Jesse Huffman, then,  
3 something happened in your memory?

4 A Yes. Then it refreshed my memory about the meetings  
5 that we had with -- you know, Atari people, because I couldn't  
6 picture them any more, it was so long. You know, because  
7 we have so many salesmen, locally. Some are reps, some are  
8 direct salesmen.

9 Q Do you remember, Dr. Tai, at your last deposition,  
10 there was an exhibit that you provided me that had a whole  
11 listing of salesmen here? You remember you provided this,  
12 don't you?

13 A Yeah, but I couldn't remember what date that --

14 Q I want you to look at page 3 of Exhibit 3, the third  
15 page. Mr. Huffman's name appears there, doesn't it?

16 A Yeah, Mr. Huffman's name did appear, but the association  
17 with who take care of what accounts, it's very hard to -- to  
18 relate, because I'm not sure which -- which of the salesmen  
19 really -- you know, take care of them. And then when they  
20 found a salesman and talked to him, and he recalls the  
21 meeting with --

22 Q Well, now -- okay. Don't let me interrupt you.

23 A Yeah.

24 Q Okay, now, precisely what was told to you about Mr. --  
25 let me ask you this:

26 Q Did you speak to Mr. Huffman?

27 A No.

28 Q Okay. Well, what was told to you that Mr. Huffman told

1 the Bally people? What was told to you about Mr. Huffman  
2 by the Bally lawyers?

3 A Oh. The Bally lawyer told me about they went to see  
4 Jesse Huffman.

5 Q Uh-huh. they Bally give us a report, who are the

6 A And Jesse Huffman, you know, gave them some information  
7 regarding the Atari visits and meetings. And that came out.  
8 Then it dawns in my mind the meeting that I have with them.  
9 Because I'm not -- at that time, don't know who handled  
10 that thing and what the topics -- you know, relating to it,  
11 until they -- I saw the sequence of events that happened,  
12 that Jesse took Atari's people to Intel and had a meeting  
13 with me and Hal Feeney at Intel. So that meeting, then I  
14 recalled -- you know, what we have done in that meeting.  
15 So that associations came out much clearer after that, see.

16 Q Well, tell me, what did they tell you that Mr. Huffman  
17 said to them, though? you know, is drawing some material

18 A Ah. Jesse went to Atari and told Atari, you know, how  
19 great the -- Intel's microprocessor is. And that -- you  
20 know, "Nothing really new to me," Jesse will always say that.  
21 And see whether there is a possibility for them to visit  
22 Intel, to explore more about the microprocessor that can  
23 be applied whatever applications they have. And that's  
24 what -- you know, generate that meeting. see, because we

25 Q Now, you remember this, that -- you don't know that Mr.  
26 Huffman went to Atari? You weren't there when he went the  
27 first time to Atari, correct? you know, the end of 1977, Dr. Hall

28 A No. At this moment, usually the salesman would let us

1 know what -- you know, the visit of the customer. No, we  
2 usually do -- did know.

3 Q But you weren't present when Mr. Huffman first approached  
4 Atari?

5 A No. But they usually give us a report, who are the  
6 customers they talked to. And then make us aware that they're  
7 going to come to visit us, and all salesmen did that.

8 Q All right, now, Atari was right in your back yard here  
9 in California; isn't that right?

10 A That's right.

11 Q Now, were you aware of Atari's existence before this  
12 visit by Mr. Huffman?

13 A Yes.

14 Q Okay. What were you aware that they were doing at  
15 Atari?

16 A Oh, we -- we always heard that -- you know, this group  
17 of young guys, and -- you know, is dreaming some phenomenal  
18 things in games, in the electronic games.

19 Q Were you aware they were thinking -- that before Mr.  
20 Huffman visited them, that they were using microprocessors  
21 in some of these games?

22 A No.

23 Q You were not aware of that?

24 A No. They are not using microprocessor, because micro-  
25 processor was -- you know, not really known by many engineers  
26 at that time.

27 Q In 19 -- we're talking about the end of 1973, Dr. Tai.

28 A Yes.

1 Q At the end of 1973, what was the status of let's say  
2 computer controlled games, to your knowledge?

3 A Oh, very limited. It's not at all. And as I recall,  
4 I spent two years -- you know, promoting that microprocessor  
5 was almost -- almost until that time.

6 Q Let's pursue that a little bit, Dr. Tai.

7 MR. MacINTOSH: What is the relevance of this,  
8 John? Whether or not microprocessors were being used in  
9 the industry in 1973?

10 MR. LYNCH: Well, one of the relevant aspects of  
11 it is precisely what else Dr. Tai knew at the time he  
12 allegedly had this conversation with the Atari people and  
13 what was known. Now, the Bally lawyers have had an opportunity  
14 to refresh Dr. Tai's recollection. I have some things here  
15 that I'd like to be able to explore with him for a while.  
16 You will see. I mean, I'm not -- it is not going to --

17 Q BY MR. LYNCH: Now, I show you an article, Dr. Tai, from  
18 Electronics in April, 1972 --

19 MR. KATZ: I object to the question -- any ques-  
20 tions based on this article, unless you show that there's  
21 some foundation.

22 MR. MacINTOSH: Have you seen this before?

23 MR. KATZ: I also object to any questions which  
24 seek to use Dr. Tai as an expert, when he is here as a fact  
25 witness.

26 MR. LYNCH: I'm not talking about an expert.

27 MR. MacINTOSH: Have you seen that before,  
28 Dr. Tai, that article?



1 THE WITNESS: Yes.

2 Q BY MR. LYNCH: That mentions the use of -- that's in 1972.  
3 It mentions the use of microprocessors in gaming machines;  
4 isn't that correct?

5 A Yes, uh-huh.

6 MR. LYNCH: I'd like to have the witness -- I want to  
7 mean the reporter mark this as Tai Deposition Exhibit -- I  
8 think it's 6. 6. a lot of articles. Take, for instance,

9 (Whereupon, the above-described document was  
10 marked Tai Deposition Exhibit No. 6 for identification.)

11 Q BY MR. LYNCH: Let me show you another article from  
12 E E Systems Engineering Today, November, '73. This is an  
13 article that generally talks about a number of adaptations  
14 of microprocessors for pinball and other video arcade games.  
15 Are you familiar with that, Dr. Tai?

16 A No, not in this one.

17 Q That, in fact, discusses the Intel microprocessor.

18 A Yes, uh-huh.

19 Q Now, what I'm asking you is prior to the time that you  
20 had your first contact with Mr. Frederiksen --

21 A Uh-huh.

22 Q -- and prior to the time you had this meeting with  
23 Bally, isn't it the case that in the industry, it was known  
24 that microprocessors could be adapted to pinball and to  
25 other video games?

26 MR. KATZ: Objection to the question as leading.

27 Also, objection to the question as lacking foundation, and  
28 also you haven't -- the question is indefinite, and you haven't

1 specified what industry.

2 MR. MacINTOSH: Do you understand the question,  
3 Dr. Tai?

4 THE WITNESS: Yes. Let me put it this way: I  
5 have a lot of discussion like that. And every time certain  
6 new products came out, a lot of people try to dream a lot of  
7 things and take advantage of that popularity in a certain  
8 concept and wrote a lot of articles. Take, for instance,  
9 Mr. Hoffa and Mr. Levine. Because I reported to Dr. Hoffa,  
10 I know. We never see one game, really, performing before  
11 our actual eyes at that time. A lot of -- a lot of, you  
12 know, paper putting up, because it's just a promotion.  
13 More in promotion of the concept.

14 Q BY MR. LYNCH: But it's --

15 MR. KATZ: He's not finished with his answer yet,  
16 I don't believe.

17 THE WITNESS: Yeah. Just a promotion of the  
18 concept, how to do those details into a game, really, not  
19 existent at that time. Because I have been talking to a lot  
20 of -- at that time, in L.A., you know, the Blackjack games,  
21 the slot machine games. Really, nobody has any concrete  
22 end finished product using a microprocessor, per se, during  
23 that time. Just a lot of talk.

24 Q BY MR. LYNCH: Well, it is the case that you testified  
25 the last time that you visited Bally before, earlier in  
26 '73, before you ever visited Mr. Frederiksen, correct?

27 A I have to check back, see whether my -- did I say that?

28 Q Look at page 15 or thereabouts, Mr. MacIntosh. 14. I'm

1 referring to page 14 of your prior deposition.

2 A Which line are you referring to?

3 Q You say at line 18, "I think some of the Bally connec-  
4 tions may be a little bit earlier, you know, because they  
5 are more identified named than Mr. Frederiksen." And then  
6 on the following page, I asked you about various names.  
7 And on page 16, you indicated you remembered a gentleman  
8 named Collin Foster. I refer you to --

9 A Yes.

10 Q -- the second half of that page.

11 MR. MacINTOSH: Now, what's the purpose of this,  
12 John?

13 MR. LYNCH: Well, the -- at that time, there was  
14 an Intel microprocessor in a Bally game.

15 MR. MacINTOSH: Well, let's assume that there was.

16 THE WITNESS: No.

17 Q BY MR. LYNCH: There was not an Intel microprocessor in  
18 a Bally game prior to the time that you saw Mr. Frederiksen?

19 A No, definitely not. Collin Foster is just an initial  
20 contact of Bally. At that time, Bally got really thrilled  
21 with the concept, because nobody really knows, okay, and I  
22 don't think there is an Intel microprocessor in that.

23 Q Were you familiar with a game called Bally Alley?

24 MR. KATZ: John, you asked that question before.

25 MR. MacINTOSH: Let me put an objection in here.

26 You know, the purpose of this deposition is Dr. Tai's July,  
27 '81 declaration. We have had his deposition in 1980, and  
28 I haven't heard question number one yet about this declaration,

1 the reason we're here. And I think you better go there  
2 pretty quick, because I'm going to start instructing the  
3 witness to button his lip, you know, unless we're going to  
4 get on to this stuff.

5 MR. LYNCH: I'll get to it, and then I'll go back  
6 to this other material.

7 MR. Macintosh; That would be good; that would be  
8 good.

9 Q BY MR. LYNCH: All right, Dr. Tai, you had this meeting  
10 with the Bally lawyers, and they told you about Jesse Huffman,  
11 right?

12 A That's right.

13 Q And they told you that Jesse Huffman had told them about  
14 a meeting, right? A Yes.

15 Q Now, prior to the time they told you about that, you  
16 didn't remember the meeting, right?

17 MR. KATZ: Objection, indefinite as to what "the  
18 meeting" means.

19 THE WITNESS: No, I didn't say that I don't remember  
20 the meeting. I would say there was some meeting, but you  
21 know, exactly who with and which salesman take care of it,  
22 I did mention to Bally's lawyers that I do not clearly  
23 recall, okay? But we had the meeting.

24 Q BY MR. LYNCH: Okay. Now, after they had this conversa-  
25 tion with you about Mr. Huffman, what happened next in connec-  
26 tion with your contact with the Bally attorneys?

27 A They show me the information, they talk to Jesse  
28 Huffman.

1 Q They showed you Mr. Huffman's affidavit?

2 A Yes.

3 Q Okay. A And --

4 Q Just a second. Let me make sure that I know what they  
5 showed you. Is this what they showed you, what has been  
6 marked as -- what is the declaration of Jesse Huffman and  
7 his Exhibit CK in Bally's exhibit book, Roman numeral eight  
8 in the patent office?

9 MR. MacINTOSH: Why don't you take a look.

10 THE WITNESS: Yes.

11 Q BY MR. LYNCH: Did they show you this other deposition (sic)  
12 of Mr. Huffman marked CE in Bally's exhibit book Roman  
13 numeral seven?

14 MR. MacINTOSH: You're referring to another  
15 affidavit, John, not a depo.

16 MR. LYNCH: Another affidavit or declaration.  
17 None of them are affidavits.

18 MR. KATZ: Is that true? I object to the mis-  
19 characterization of the document. I think it is an affidavit.

20 MR. LYNCH: It is an affidavit.

21 THE WITNESS: I don't recall the exact -- you  
22 know, let me read. I think Bally's lawyer read the -- you  
23 know, summarized the content of that, as I recall.

24 Q BY MR. LYNCH: I'm just interested if you saw that docu-  
25 ment in exhibit book Roman numeral seven.

26 A Yeah, this one I saw definitely.

27 Q That's the one in Roman numeral eight?

28 A Yeah. And this one, I don't recall exactly whether I

1 saw it. But I did -- you know, have discussion on it with  
2 the Bally lawyers, on this one.

3 Q All right, now, after you saw the deposition -- the  
4 two -- the declaration and affidavit of Mr. Huffman, what  
5 else happened in connection with your discussions with the  
6 Bally lawyers in the last several weeks?

7 A Then they asked me to -- you know, if you recall that  
8 meeting, describe to them -- you know, something that  
9 happened in the meeting that I can recall.

10 Q And what did you tell them then? Then you told them  
11 you recalled the meeting?

12 A Yes. So I told them, you know, what I can, in my  
13 recollections about that meeting.

14 Q Then let's go back to your meeting with Mr. Frederiksen.  
15 You had a meeting with Mr. Frederiksen, and when did you  
16 place that meeting? When did it occur?

17 A I did mention in the last deposition, didn't I? I  
18 said I don't recall exactly. I think maybe in the tail end  
19 of the year of 1973 or 1974, I recall my deposition say that.

20 Q But how do you place it at December of '73 or early '74?

21 A Yeah, because I -- it remind me when I went with Mr.  
22 Levine, our sales rep or regional people. There was chilly  
23 day, you know, overcast. It is not like a summery day to me.  
24 Because I was very familiar with Chicago's summer, you know,  
25 very humid and hot. So that kind of put me in that time frame  
26 than in -- you know, than other seasons of the years.

27 Q Now, in your previous deposition -- well, you visited  
28 Mr. Frederiksen with Mr. Levine. The purpose of your meeting

1 was to try to sell Intel microprocessors; is that right?

2 A That's right.

3 Q And you went to see Mr. Frederiksen's company in  
4 Milwaukee to try and convince them to use microprocessors,  
5 right?

6 MR. KATZ: Objection to the question as leading.

7 you know, THE WITNESS: That's the goal, but the -- Levine  
8 usually give me some background, what the customer needs is.  
9 So in the Frederiksen case, he is looking several customers'  
10 microprocessors, okay, at that time. Like National or Rock-  
11 well people. But none of them could express to them, you  
12 know -- you know, how to -- how to do it using microprocessor.  
13 And he want me to convince him more from a technical stand-  
14 point, rather than -- you know, a sales pitch, you know. --  
15 He needs to know exactly how he do it.

16 Q BY MR. LYNCH: Uh-huh. Was that standard at the time you first

17 A And -- Jackson, wasn't it, to use a multiplexing

18 Q And so you had a conversation with him on how to do it?

19 A How to do it, yeah.

20 Q Now, what did you tell him in that conversation you  
21 could do with the Intel microprocessor?

22 A Okay, the discussion mainly involved -- you know, like  
23 the display of numbers, the -- you know, lighting up the  
24 lights, and turn on the switches. And how do you interphase  
25 the microprocessor and the outside, you know, devices, like  
26 the displays, you know.

27 Q Well, in your prior deposition, I asked you -- okay,  
28 what did you tell Mr. Frederiksen? What did you tell him he



1 could do?

2 A So usually when he asked that kind of question, then --  
3 you know, we have a manual, the MCS-4 manual. And a lot of  
4 information is in the manual for applications, to understand  
5 like instruction sets, you know, how to strobe display, how  
6 to scan keyboards. So in general, we will start with --  
7 you know, whatever the appropriate applications. What I do  
8 is usually draw a CPU block to him, and tell him where the  
9 output that he can use, and then -- you know, how the matrix  
10 can be formed to get the implementation of his applications.

11 Q And you told him about using multiplexing techniques?

12 MR. KATZ: Object to the question as leading.

13 Q BY MR. THE WITNESS: Multiplexing technique is not what  
14 I told him. It's a question that he asked, he'd like to --  
15 you know, using a multiplexing scheme, to implement his system.

16 Q BY MR. LYNCH: Well, it was standard at the time you first  
17 met Mr. Frederiksen, wasn't it, to use a multiplexing  
18 technique on displays --

19 MR. KATZ: Objection.

20 Q BY MR. LYNCH: -- like LED displays?

21 MR. KATZ: Objection to the question as leading.

22 Q BY MR. THE WITNESS: No, not necessary. It is a -- you  
23 know, it is a popular concept, people think -- you know,  
24 that -- let me put it this way: Sometimes a lot of people  
25 mention like multiplexing. A lot of engineers might not  
26 really know what the meaning is, because everybody use it,  
27 okay? So my -- my idea usually to show a customer -- I  
28 don't care what name you give me, whether multiplexing or



1 strobing, whatever. My job is try to go in there and show  
2 you exactly how you do it.

3 Q BY MR. LYNCH: I understand. But you knew about multi-  
4 plexing techniques for displays at the time you spoke to  
5 Mr. Frederiksen; isn't that right?

6 A Yeah, I know.

7 MR. MacINTOSH: You know what, John? You plowed  
8 this ground on pages 22, 23 and 24 of the deposition you  
9 took here in September, 1980.

10 THE WITNESS: Yeah.

11 MR. LYNCH: Well -- is referred to in Paragraph 2:

12 MR. MacINTOSH: Let's find some other ground to plow.

13 Q BY MR. LYNCH: The suggestion in your affidavit is that  
14 Mr. Frederiksen told you about multiplexing the displays.  
15 In fact, it was the opposite. You told Mr. Frederiksen;  
16 isn't that right, Dr. Tai?

17 A No, that's not true.

18 MR. MacINTOSH: Before you answer the question,  
19 in the deposition taken in 1980, I thought that was cleared  
20 up. Now we have a declaration in 1981. I think that's the  
21 bill of fare today.

22 Q BY MR. LYNCH: Let's talk about the declaration. Now,  
23 the declaration, Dr. Tai, suggests -- your current declara-  
24 tion, CJ in Exhibit Number VIII, which I put before you,  
25 suggests that Mr. Frederiksen told you about using the  
26 multiplexing techniques for displays; isn't that right?

27 A (Witness nods head up and down.)

28 MR. MacINTOSH: Before that question is answered,

1 John, tell me what you're referring to in this piece of  
2 paper. Give me a paragraph and line number, so I can track  
3 you, to make sure we're all on the same wave length here.

4 Q Now MR. LYNCH: I'm talking about Paragraph 2.

5 A So MR. MacINTOSH: All of Paragraph 2?

6 Q MR. LYNCH: Well, I'm going back to the meeting  
7 with Frederiksen. he hardware that he has already in his room

8 MR. MacINTOSH: That's right. look at a pinball

9 machine, MR. LYNCH: Okay. on the wirings, you know. I

10 Q BY MR. LYNCH: Now, the meeting with Frederiksen, in the  
11 meeting with Frederiksen, that is referred to in Paragraph 2;  
12 isn't that correct, Dr. Tai?

13 A Yes. let's get back to the displays, Dr. Tai.

14 Q Now, in that meeting, did you suggest to Mr. Frederiksen  
15 that he should use multiplexing of displays in a pinball  
16 game to interface it with the microprocessor, or did he  
17 suggest it to you? the numerical displays. You understood

18 A I don't recall who suggested to who. My recollection  
19 is that when I approach a customer, usually it is I ask him,  
20 "What do you like -- how do you like your system to be  
21 implemented?" because my concern is how to fit my micro CPU,  
22 microprocessor MCS-4 into the system. That's what my  
23 interest is. How they do in the peripheral is mainly their  
24 job. It is not my job to tell them what to do, okay?  
25 Whether the signal coming in is noisy or not, whether to use  
26 an LED or fluorescent or keyboards or card readers, I really  
27 don't care, unless they ask me, they say, "I don't know,  
28 tell me a scheme." But in Frederiksen's case, no, I don't

1 think I have to tell him. He's very aware of what they want  
2 to do in the pinball machine, okay? My -- his problem is  
3 how to use that CPU, MCS-4.

4 Q So what did you tell him about how to use it?

5 A So my main thing is try to introduce the instruction  
6 set we have in the MCS-4, how to write the program and  
7 interphase with the hardware that he has already in his mind  
8 what to do with the hardware. If you look at a pinball  
9 machine, it's fairly complex on the wirings, you know. I  
10 am really not very familiar with those things, and he's more  
11 familiar, how to light up the lights and actuate the  
12 solenoids, okay?

13 Q Well, let's get back to the displays, Dr. Tai.

14 A Uh-huh.

15 MR. KATZ: Objection to the question as indefinite  
16 as to what you mean by displays.

17 Q BY MR. LYNCH: The numerical displays. You understood  
18 that a pinball machine was to have numerical displays; isn't  
19 that correct? A Yes.

20 Q And you understood, or you felt that that -- those  
21 displays would be, as you said, fluorescent or LED or some  
22 type of electrically activated display, correct?

23 A Yes.

24 Q Now, at the time that you went to see Mr. Frederiksen,  
25 isn't it the case that you knew that using multiplexing  
26 techniques on such electrically activated displays was a  
27 standard thing other engineers had done?

28 MR. KATZ: Objection to the question as leading.

1 THE WITNESS: No. To answer that question, it is  
2 no. You can't say that I knew, because I -- until I see  
3 what they have, because in some systems, the multiplexing  
4 technique doesn't work, you know. In our manual, we just  
5 say, you know, that's a nice concept that applies to your  
6 case, okay?

7 Q BY MR. LYNCH: But it is a concept that you knew was used  
8 prior to the time that you went to see Mr. Frederiksen,  
9 correct?

10 MR. KATZ: Objection to the question as mischaracter-  
11 izing his previous testimony.

12 THE WITNESS: It is very hard to answer a question  
13 like that that I knew, because -- you know, we -- every  
14 customer has a very specific application. I don't know --  
15 you know, what you exactly are trying to drive at that I --  
16 you know, if you're talking about just the multiplexing  
17 scheme in a certain format, yes, because we try it ourselves,  
18 you know.

19 Q BY MR. LYNCH: To have a matrix that is multiplexed, to  
20 activate displays was a technique that you knew had been  
21 used before with the Intel microprocessor; isn't that correct?

22 MR. KATZ: Objection to the question as being  
23 indefinite.

24 THE WITNESS: To tell you the truth exactly at  
25 that time, I didn't know who used that microprocessor --  
26 that application. But this is just a concept, you know.

27 Q BY MR. LYNCH: This is the MCS-4 Microcomputer Set User's  
28 Manual dated February, '73, Revision 4. Now, it is the case

1 that you were thoroughly familiar with this document at the  
2 time; isn't that right?

3 A That's right, uh-huh.

4 Q Now, this document has formerly been marked as Exhibit  
5 GD-51. Now, on page 53 --

6 A That's right.

7 Q -- of Exhibit GD-51, can you tell -- you were familiar  
8 with that disclosure in the user's manual, weren't you?

9 MR. MacINTOSH: Before you answer that, Dr. Tai,  
10 so what if he was and so what if he wasn't? Where does that  
11 leave us?

12 MR. LYNCH: I've got to ask the wrap-up question,  
13 if he is familiar with it.

14 MR. KATZ: I object on several grounds. First  
15 of all, I think that this is -- that John is just trying to  
16 use Dr. Tai to establish state of the art, and that wasn't  
17 the purpose of this deposition. Two, I object on the ground  
18 that he covered this particular ground in these manuals in  
19 the first deposition that he took of Dr. Tai, and now he's  
20 going over the same ground again. And third, I object on  
21 the ground that he hadn't shown a foundation that Dr. Tai  
22 is familiar with this particular manual, since he indicated  
23 that there were revisions just about every year.

24 Q BY MR. LYNCH: I think you did say you were familiar with  
25 this one, didn't you, Dr. Tai?

26 MR. MacINTOSH: Let's assume he even wrote the  
27 manual. Where does that leave us? I mean so what?

28 MR. LYNCH: If he can answer the question --

1 Q BY MR. LYNCH: You are familiar with the manual, Exhibit  
2 GD-51, aren't you, Dr. Tai?

3 A Yes.

4 Q Now, and you were familiar with the contents of it at  
5 the time that you first discussed -- had this discussion  
6 with Mr. Frederiksen; isn't that correct?

7 A Oh, the content of the manual, yes, uh-huh.

8 Q And isn't it true that on page 53, the manual forth-  
9 rightly suggests that multiplexing techniques should be used  
10 for LED displays or NIXIE tube displays?

11 MR. KATZ: Objection to the question as being an  
12 almost identical question asked in the first deposition,  
13 and the witness gave an answer to it on September 17, 1980.

14 MR. MacINTOSH: Yes, what are we doing, you know?

15 MR. KATZ: In fact, during that particular deposi-  
16 tion there was an objection by Mr. Welsh on lack of founda-  
17 tion. It is on page 27, Mr. Welsh said, "I object to the  
18 question on the ground that you're referring to the manual,  
19 and the witness has testified he is not sure if that's the  
20 exact manual." Mr. MacIntosh went on to voir dire the  
21 witness on foundation objections on that page, and on page  
22 34, 35 and 36 that was also gone into.

23 MR. MacINTOSH: Yes.

24 MR. LYNCH: That was another manual, Mr. MacIntosh.

25 MR. MacINTOSH: I think the subject matter is the  
26 same.

27 MR. LYNCH: It's another manual than this one that  
28 the witness clearly said he's familiar with.

1 THE WITNESS: Let me --

2 MR. MacINTOSH: Excuse me a moment, Phil. The  
3 piece de resistance on the table here is the July 17, 1981  
4 declaration. And I think you're way off in the bushes,  
5 insofar as asking these other questions. You plowed this  
6 ground before. Let's assume the man knows it from before.  
7 Let's ask some questions on some other topics.

8 MR. LYNCH: I'm going to pursue this manual unless  
9 you instruct him not to answer it.

10 MR. MacINTOSH: I probably will.

11 MR. LYNCH: All right.

12 MR. MacINTOSH: I probably will.

13 Q BY MR. LYNCH: Now, Dr. Tai, isn't it true that at page  
14 53 of the manual, Exhibit GD-51, there is a disclosure that  
15 LEDs or NIXIE tubes can be activated using a multiplexing  
16 technique?

17 MR. MacINTOSH: Let me object to the question and  
18 tell the witness not to bother to answer it because you  
19 covered it in pages 35 and 36 of your deposition of last year.  
20 I don't know what the relevance of all that is to this  
21 declaration.

22 Q BY MR. LYNCH: Dr. Tai, do you refuse to tell me about that?

23 MR. MacINTOSH: Yes, upon instructions of his counsel,  
24 Donald MacIntosh, sitting opposite from you.

25 Q BY MR. LYNCH: Do you refuse, Dr. Tai, to discuss that  
26 with me?

27 A If my counsel say so.

28 Q So you won't tell me about your discussions with this



1 Mr. Frederiksen having to do with LEDs and what knowledge  
2 you had prior to that time as derived from the manual,  
3 Exhibit GD-51?

4 MR. MacINTOSH: Now, then, let me respond to that  
5 one.

6 MR. KATZ: John, you're obviously mischaracterizing  
7 what is going on here.

8 MR. MacINTOSH: I think the very purpose of this  
9 deposition today is for you, John, to ask Phil here what was  
10 discussed in that meeting insofar as it was not discussed  
11 in the deposition last year. Now, why don't you do that?

12 MR. LYNCH: Now, I'm going -- you can behave the  
13 way you want, Don. I'm going to do what I want to do.

14 MR. MacINTOSH: Yes, I know you are. I know you  
15 are. But you're looking for a result here. I'm trying to  
16 help you get that result without going all around the  
17 mulberry bush, you see.

18 Q BY MR. LYNCH: All right, Dr. Tai. Let me ask you about  
19 what else Mr. Frederiksen told you. What did he discuss  
20 with you in the meeting referred to in Paragraph 2 of your  
21 recent declaration? What did you discuss about switches?

22 MR. MacINTOSH: Well, let me address this, because  
23 you haven't really gotten here, John. I'll read into the  
24 record Paragraph 2: "Attached hereto as Exhibit One or I,  
25 can't see it, bearing my initials, is a drawing which is to  
26 the best of my recollection essentially the same as the  
27 drawing I observed Jeffrey Frederiksen draw on a blackboard  
28 when I met him in December of 1973 at the facility where he



1 worked in Milwaukee, Wisconsin. At this meeting with  
 2 Frederiksen, he disclosed to me his concept of a pinball  
 3 machine using a matrix multiplexing system with a micro-  
 4 processor as shown in the drawing."

5 John, you haven't even yet asked him a question about  
 6 the drawing --

7 MR. LYNCH: I apologize.

8 MR. MacINTOSH: -- which is incorporated in  
 9 Paragraph 2.

10 Q BY MR. LYNCH: The drawing says "switches" on it, doesn't  
 11 it, Dr. Tai? A Yes.

12 Q Now, and you said in Paragraph 2 that Mr. Frederiksen  
 13 had a discussion with you about his design of a microprocessor  
 14 operated pinball, right?

15 A Yes.

16 Q And I'm asking you what, if any, discussion he had with  
 17 you about switches. A Yes.

18 Q What did he say? A He said you did discuss the concept of

19 A Oh, the way he want to strobe the switches, using the  
 20 microprocessor.

21 Q He told you that; is that correct?

22 A Yes.

23 Q I refer you to paragraph -- to page 63 of your prior  
 24 deposition, Dr. Tai. At line 14, I asked --

25 A 63? A Yes.

26 MR. MacINTOSH: Uh-huh.

27 Q BY MR. LYNCH: At line 14 of page 63, I asked you if  
 28 there was any discussion --

1 MR. MacINTOSH: Just a moment, let me read it here.

2 Q BY MR. LYNCH: I asked you if --

3 A Yeah, uh-huh.

4 Q I asked you if there was any discussion with Mr.  
5 Frederiksen about multiplexing in connection with switches,  
6 and you said no.

7 MR. KATZ: Objection to the question as mischarac-  
8 terizing the question and the answer that was given before.

9 MR. MacINTOSH: Let's get it down on the record.  
10 Line 14, page 63 --

11 THE WITNESS: Let's read that statement.

12 MR. MacINTOSH: "Did Mr. Frederiksen have any  
13 questions, or do you recall any discussions with him about  
14 the use of the multiplexing techniques to the input, to  
15 using multiplexing techniques on input switches to a micro-  
16 processor?" And the answer was, "No," which is a different  
17 question.

18 Q BY MR. LYNCH: So you say you did discuss the concept of  
19 using multiplexing in connection with input switches with --

20 A When I say the answer no, it referred to the input  
21 he's talking about. Your last question is talking about  
22 discussion of the switches. Discussion of switches is yes.  
23 But to multiplex the input switches, because I don't under-  
24 stand your question at that time, because there is no  
25 multiplexing input switches. That's why, you know. The  
26 input is the key, you know, because there is no input switches.

27 Q You don't regard there to be input switches on a keyboard  
28 or on the field of a microprocessor, of a pinball --

1 A You referred to the specific discussion with him. His  
2 drawing doesn't show input switches, because there's no --  
3 you know -- see, when you're talking -- you see, that's the  
4 concept of multiplexing. When you're talking about input,  
5 you only have switches. No multiplexing on input switches.  
6 We don't multiplex, you know, per se. Because we -- where  
7 is that switch coming in? Because the discussion is based  
8 on this diagram that I am familiar with, you know, when I  
9 discuss with him. There is no -- if you say switches, yes.  
10 But not the input -- using, you know, to the input. No.

11 MR. KATZ: Let the record show that the witness,  
12 when he said "this drawing" referred to the drawing that was  
13 attached to his declaration.

14 Q BY MR. LYNCH: Dr. Tai, refer to the bottom of page 64  
15 of your deposition. I asked you the question, "Do you  
16 remember how many switches were contemplated by Mr. Frederiksen  
17 in this particular pinball machine?" You --  
18 answered, "No, I don't recall."

19 A Yeah, how many I don't know.

20 Q Now, on the next page, I said, "Now, did you discuss --  
21 with Mr. Frederiksen the concept that he intended to use  
22 multiplexing in connection with these input switches?" You  
23 said, "No."

24 A Yeah, it is still the input switches. I don't know what  
25 the input switches. See, the input is the key in this  
26 discussion, and because there's no meaning to me at that time  
27 what you mean by input. Because I don't know what the input  
28 is, because I don't recall I told him, you know, what the

1 input is. You see, you keep referring to the input switches.

2 Q On page 64, Dr. Tai, I asked you, "Was there any  
3 discussion with Mr. Frederiksen about how to interface those  
4 switching inputs into the microprocessor?" "Yes, I believe  
5 we discuss," you answered, "you know, but I don't recall  
6 the detail. Some of those are inputs. The I/O, what they  
7 are called, the important topic." You knew what I was  
8 talking about as input switches, Dr. Tai.

9 A Yeah, but not multiplexing. The other is talking how  
10 to multiplex the input switches. Now, if you say the switch-  
11 ing inputs coming in, then it's a straightforward question.  
12 I have just one input. I don't know anything about the  
13 multiplexing switch input. There's no such thing in the  
14 system, I don't think so. But the inputs, input from the  
15 switches, then it's a different thing than you're talking  
16 about, you know, like a ball and it drops it into a hole,  
17 turn on a switch and give me an input. That's really --

18 Q But isn't there a multiplexing going on, even if none  
19 of the switches are closed?

20 A I don't understand your question now. Let me put it --

21 Q Let's say there's no ball on the field.

22 A There's no multiplexing. Where is the multiplexing  
23 coming in?

24 Q You mean the switches aren't being strobed at that  
25 particular time?

26 MR. KATZ: Objection to the question, mischaracter-  
27 izing the answer.

28 THE WITNESS: You use the other word, strobe.

1 That's not multiplexing now. If you add strobing, that's  
2 different. There's no multiplexing. You see, there's a  
3 confusion here, I think, using that multiplex word too much  
4 here. That's not the word to use. When you look at the  
5 switches, yes, you strobe. You use that word right, strobing,  
6 yes. Not multiplexing.

7 Q So what is the right word to use?

8 A For switches, if you don't touch the switches, like  
9 cash registers, like pinball machines, like calculators, you  
10 have a strobe. You use the right word, it is strobe. One  
11 by one, you see.

12 Q Now, isn't that what -- well, strike that.

13 A MR. MacINTOSH: He doesn't even charge you tuition  
14 for this, either.

15 Q BY MR. LYNCH: In the drawing that is attached, Exhibit 1,  
16 did Mr. Frederiksen tell you that he intended to strobe the  
17 input switches?

18 A Yes, you see, he used this to strobe it, as a strobing  
19 signal coming in.

20 Q And what was -- and he told you he was going to do that?

21 A That's right. That is his -- you know, I can't tell,  
22 because I don't know how many switches he has.

23 MR. KATZ: To make the record clear, I'd like it  
24 to show that the witness was pointing, when he referred to  
25 the strobing signals, to the drawing attached to the  
26 declaration of Dr. Tai.

27 Q BY MR. LYNCH: Who drew the drawing that is Exhibit 1 on  
28 the board when you were with Mr. Frederiksen?

1 A Frederiksen drew it.

2 Q You didn't draw anything?

3 A No.

4 Q Did he draw anything else on the board?

5 A This portion. I show him --

6 MR. KATZ: What is the question, please? Could I  
7 have the question repeated?

8 Q BY MR. LYNCH: Did he draw anything else on the board?

9 A Did Frederiksen, no.

10 Q Did you draw anything on the board?

11 A Yes.

12 Q What did you put on the board?

13 A The main thing is the CPU portion. I show him, you  
14 know, where the outputs should be, you know. And that's  
15 where he put -- you know, in the out and the in.

16 Q So you told him where to put the inputs and the outputs  
17 and where to generally put the material located in the control  
18 logic block on the left-hand side of Exhibit 1?

19 A The CPU chip --

20 MR. KATZ: Objection to the question as mis-  
21 characterizing his previous answer.

22 Q BY MR. LYNCH: You did say, "That's right," didn't you,  
23 Dr. Tai?

24 A No, the CPU, I said, chip. On the CPU chip, yes.

25 Q You did put the notations that are located in the  
26 block on the left side of Exhibit 1?

27 A I didn't put the notation. He put it in.

28 Q But you told him where to put them?

1 A Yeah, I draw on the board.

2 Q You drew on the board?

3 A Yeah.

4 Q You drew on the board the control logic block?

5 MR. KATZ: Objection to the question, indefinite.

6 Q BY MR. LYNCH: Is that what it is?

7 A That's not a control logic, it's a CPU.

8 Q It says on the top "control logic".

9 A Oh, the control logic, this control logic doesn't  
10 refer to the CPU. That means the -- that is his own word,  
11 it has nothing to do with the CPU. This block is the CPU.  
12 Now, control logic, I don't know what he means over there,  
13 you know.

14 Q So you told him where to put the inputs and outputs on  
15 the block on the left-hand side of Exhibit 1?

16 A On the left-hand side, yeah. That's a 4004 CPU.

17 Q Now, how long was this meeting with Mr. Frederiksen?

18 A Oh, I would say about an hour or so.

19 Q What else did he talk to you about any problems he  
20 might have had in connection with this interfacing the  
21 microprocessor to the pinball machine?

22 A Oh, since 4004 CPU uses an MOS device, so the worry is  
23 if the MOS device has enough drive capability for the  
24 display.

25 Q For an LED display?

26 A No, at that time I think they're talking about  
27 incandescent, you know, lamps, you know, that takes a high  
28 voltage.



1 Q What about the display, what were they talking about,  
2 what kind of a numerical display was he talking about at  
3 that time?

4 A I don't recall exactly what -- you know, as I know it  
5 is an incandescent lamp.

6 Q What are we talking about the numerical display, what  
7 did he tell you about the numerical display?

8 A Oh, what he told me is, you know, the numerical display  
9 is mainly for, you know, register the scores of the games.

10 Q Yes. Now, what did he tell you about how he was going  
11 to activate that display, or what did you tell him?

12 MR. KATZ: Objection to the question as an alterna-  
13 tive.

14 Q BY MR. LYNCH: Go ahead, Dr. Tai.

15 A The discussion is mainly because it takes such a high  
16 voltage, whether -- you know, our recommendation is that he  
17 needs a -- you know, outside drivers, and minimize the noise  
18 problem, that is the major problem, because the MOS output  
19 is not capable of driving it.

20 Q Are we talking about an LED display?

21 A No.

22 Q The MOS --

23 A The incandescent lamp.

24 Q I want to talk about the numerical display. What did  
25 he discuss with you about driving the numerical display?

26 A Oh, numerical display, we still have need -- our  
27 discussion mainly concentrated because the output of the  
28 MCS-4 is a four bit BCD output. So he needs to have a BCD



1 to seven segments conversion chips to drive the LED, because  
2 the LED takes about ten -- seven to ten milliamp, and MOS  
3 couldn't -- you know, couldn't --

4 Q What did you tell him and what did he tell you about  
5 that?

6 A Well, I told him how the output should be, you know.  
7 The output, where he should get his -- all the numbers should  
8 go to, you know, assign a certain output for it, BCD output.  
9 And then the rest, let the seven segments decoder take care,  
10 and the strobe signal, take care of the display, because  
11 the BCD to seven segment decoder, it didn't have enough  
12 drive capability.

13 Q So you told him he could light up the LED numerical  
14 display just with a seven segment decoder?

15 A I didn't tell him. He already had that thing in there.  
16 I told him, you know, "That's okay, there's no problem."

17 Q What did you tell him to do about the lamps?

18 A I didn't tell him, because I feel it may be a problem,  
19 you know.

20 Q You didn't offer any suggestion at all?

21 A No. The only suggestion I say, "You need drivers. You  
22 need to clean the--" because we're not designing a system  
23 for him. We just, you know, give him some idea, unless they  
24 ask us to design it. But in this case, no. He knew what --

25 Q He knew what?

26 A He knew how to handle that thing, once we give him the  
27 signal from the output of the --

28 Q How did he tell you he was going to handle the lamps?

1 MR. KATZ: Objection to the question. That's  
2 assuming something that hasn't been testified to.

3 THE WITNESS: I don't recall he did tell me how to  
4 really handle the lamp. I'm waiting for his answer, actually.  
5 You know, I say -- you know, if there's a good way, let me  
6 know later on, you know.

7 Q BY MR. LYNCH: At the time you recognized there was a  
8 problem in handling the lamps?

9 A There's a problem from our end of looking at it.

10 Q And he didn't tell you how he was going to do it at  
11 that time?

12 A Not exactly. Because he was wondering, too. Because the  
13 MOS device he's going to try out, you know, his technique.

14 Q So you don't know how he was going to do it?

15 A No.

16 Q Now, with respect to the switches, how did he tell you  
17 he was going to handle the switches?

18 A That's what I'm saying, you mentioned a magic word,  
19 you know. He's going to strobe the switches. I concurred  
20 to that, because -- you know, it has a lot of benefits in  
21 strobing the switches. It reduce a lot of power consumptions.

22 Q What kind of switches did you understand were involved  
23 in the playfield of the pinball game?

24 A I don't.

25 Q Did you understand there were relays and solenoids and  
26 things of that nature?

27 A Later on, yeah, I knew. He told me that.

28 Q He told you at the meeting, right?

1 A Uh-huh.

2 Q Well, on page 51 of the manual, which is GD-51, it  
3 indicates, "In each of these systems a number of peripheral  
4 devices such as keyboards, switches, indicator lamps,  
5 numerical displays, printer mechanisms, relays, solenoids,  
6 et cetera, may have to be integrated or controlled."

7 MR. KATZ: Objection to the question as calling  
8 for an opinion of this witness, a fact witness, and eliciting  
9 an opinion based on this book.

10 MR. LYNCH: I haven't asked any opinion yet.

11 MR. KATZ: You already went through this subject  
12 matter in the previous deposition.

13 MR. LYNCH: This particular part, I don't know if  
14 it was even in the prior one.

15 Q BY MR. LYNCH: Now, you were familiar with that in the  
16 manual at the time that you met with Mr. Frederiksen, right,  
17 Dr. Tai?

18 MR. KATZ: Objection to the question as leading.

19 THE WITNESS: Yes, the manual, yes, uh-huh.

20 Q BY MR. LYNCH: And isn't it the case that it indicates  
21 that Intel was familiar with the fact that interfacing  
22 solenoids or relays with the microprocessor was a standard  
23 thing that had to be done, correct?

24 MR. KATZ: Objection to the question as leading.

25 THE WITNESS: Is your question -- let me ask you  
26 to clarify that question. Are you saying that Intel know  
27 how to do the interphase?

28 Q BY MR. LYNCH: No, I'm saying that they knew that this

1 was a standard thing that had to be done.

2 MR. KATZ: Objection to the question as to who is  
3 "they" and who is "Intel" and what Intel knows, who at Intel?  
4 Intel is a big organization.

5 THE WITNESS: I want to ask are you saying that  
6 we know how that has to be done, or the customer know how?

7 Q BY MR. LYNCH: No, I said you knew, you personally, as  
8 the person who was going around trying to solicit business,  
9 knew that one of the things that had to be done was interfacing  
10 switches with the microprocessor, correct?

11 MR. KATZ: Objection to the question.

12 THE WITNESS: I don't know how to interface, but  
13 we knew -- you know --

14 Q BY MR. LYNCH: You knew that had to be done, right?

15 A Yes.

16 Q And you also knew, as set forth in Paragraph 1, that  
17 when there are a great many inputs, more than can be  
18 directly handled by the microprocessors, multiplexers had  
19 to be added, just as stated there, right?

20 MR. KATZ: Objection to the question as leading,  
21 lacking a foundation and calling for an expert opinion,  
22 after the fact.

23 THE WITNESS: Yes, as is stated, yes.

24 Q BY MR. LYNCH: Now, you also knew on page 52, Figure 13,  
25 there is an arrangement set forth for how to arrange switches  
26 and how to get the inputs from switches to a microprocessor;  
27 isn't that right?

28 MR. KATZ: Objection to the question on the same

1 grounds, in that this particular figure was covered in the  
2 previous deposition.

3 MR. MacINTOSH: How does that pertain, John, to  
4 Exhibit 1 connected to the Tai affidavit?

5 Q BY MR. LYNCH: I'll ask one more question. You knew  
6 about that figure, didn't you?

7 MR. MacINTOSH: Let's assume he did.

8 THE WITNESS: Yes.

9 Q BY MR. LYNCH: Now, what is the difference between the  
10 arrangement of switches suggested here in Figure 13 and the  
11 arrangement suggested by Mr. Frederiksen in Exhibit 1?

12 Q BY MR. KATZ: Objection to the question, calling for  
13 an opinion and a comparison, and we would object to the ques-  
14 tion, unless the witness had an occasion to have compared  
15 that previously and drawn a conclusion. Otherwise, you're  
16 calling for a present opinion. You're asking him to be an  
17 expert witness for you and to compare one document to another  
18 document, and neither of which he actually authored or created.  
19 And you're asking him to draw conclusions and give you expert  
20 opinions, and we strongly object to that use of Dr. Tai here  
21 at the deposition when he came here as a fact witness, in  
22 connection with his declaration.

23 MR. MacINTOSH: I don't see any particular relevance  
24 to that, John. Suppose he --

25 MR. LYNCH: We can do it now or we can do it later.

26 MR. MacINTOSH: Let's do it later.

27 Q BY MR. LYNCH: Dr. Tai, do you refuse to tell me --

28 MR. MacINTOSH: You may as well, uh-huh.

1 Q BY MR. LYNCH: Do you refuse, Dr. Tai, to answer my  
2 question about Figure 13?

3 A Yeah, I refuse.

4 Q Tell me this: At the time that Mr. Frederiksen  
5 suggested the arrangement of the switches set forth in Exhibit  
6 1 to your affidavit, was that arrangement of switches new  
7 to you, to input switches that way to a microprocessor?

8 MR. KATZ: Objection to the question as indefinite.  
9 You don't know what "that" means.

10 MR. MacINTOSH: What's the relevance, if it was  
11 new or old?

12 Q BY MR. LYNCH: I'm asking at the time that Mr. Frederiksen  
13 put the drawing that is Exhibit 1 to your declaration on  
14 the board, Dr. Tai, were you at that time aware of the same  
15 technique to interface switches with a 4004 Intel micro-  
16 processor?

17 MR. KATZ: Object to the question as what is meant  
18 by "same technique".

19 MR. MacINTOSH: Yes, I don't see, John, that that's  
20 particularly relevant. He may think it is the best thing  
21 since sliced bread or he may think it is the worst thing  
22 since two week old bread, but what does it have to do with  
23 the declaration of July 17, 1981, you know? I imagine you  
24 can get up some people with super-duper credentials and say,  
25 "Hey, this is really old stuff," but what does that have to  
26 do with Dr. Tai? You know.

27 Q BY MR. LYNCH: Let me ask you this, Dr. Tai: At the time  
28 that Mr. Frederiksen placed Exhibit 1 on the board in

1 Minneapolis, did you regard that as proprietary information  
2 of Mr. Frederiksen's company?

3 A Yes.

4 MR. KATZ: Objection.

5 Q BY MR. LYNCH: So that was proprietary at that time; is  
6 that right?

7 A To them, yes.

8 Q Did you regard it all, insofar as the switches were  
9 concerned, was that different than the things that you were  
10 aware of at Intel with respect to interfacing switches to  
11 a microprocessor?

12 MR. MacINTOSH: Let's -- you know --

13 MR. KATZ: Objection to the question.

14 Q BY MR. LYNCH: Was that aspect of it proprietary?

15 MR. KATZ: Objection as to whether or not he ever  
16 drew a conclusion at that time as to whether or not that  
17 portion was proprietary.

18 MR. MacINTOSH: Yes. At the incidents.

19 MR. KATZ: If he didn't draw any conclusion at  
20 that time, I would object to the question.

21 MR. MacINTOSH: I think we better go back, John,  
22 to the declaration, as to what is here, and ask your ques-  
23 tions, you know, based from the declaration as contrasted  
24 from the questions from prior depositions and manuals you  
25 can pull out of the bag and stuff like that.

26 Q BY MR. LYNCH: Well, Dr. Tai, are you going to answer my  
27 question?

28 MR. MacINTOSH: No.



1 Q BY MR. LYNCH: All right, Dr. Tai, let me ask you this:  
2 Were there any questions of the Bally lawyers you refused  
3 to answer in the meetings you had with them?

4 A Would you rephrase your question?

5 Q You didn't refuse to answer any questions of the Bally  
6 lawyers in all these various meetings you had with them,  
7 did you?

8 MR. KATZ: Objection to the question as leading  
9 and indefinite as to who are Bally lawyers.

10 MR. MacINTOSH: You know, if they took his deposi-  
11 tion, I think we'd come out about the same way. And why not?  
12 What's sauce for the goose is sauce for the gander.

13 Q BY MR. LYNCH: I asked you a question, Dr. Tai. In your  
14 discussions with Mr. Katz, Mr. Schnayer and Mr. Welsh, did  
15 you refuse to answer any of their questions?

16 A Let me put it this way: You know, they asked a question  
17 that -- you know, for my recollections. And I don't know how  
18 to refuse my recollections about the incidents.

19 Q I'm asking you about your recollection now about the  
20 time that you were with Mr. Frederiksen. I'm asking if  
21 your recollection is that when you saw that switch input  
22 to the microprocessor, whether you thought there was anything  
23 new about the way that Mr. Frederiksen was going to input the  
24 switches to the microprocessor.

25 MR. KATZ: Objection to the question as to whether  
26 he drew any conclusion at that time and whether he recalls  
27 having drawn any conclusion at that time.

28 BY MR. LYNCH: That's fine.

1 MR. MacINTOSH: Do you have any recollection of  
2 what you thought at that time?

3 THE WITNESS: No.

4 Q BY MR. LYNCH: You don't --

5 A I don't -- you know, to answer your question, I  
6 don't recall what -- you know, a precise conclusion, say,  
7 one way or the other. I don't recall that.

8 Q You don't recall that part of what you were thinking  
9 at the meeting?

10 A No, I don't think so.

11 Q Do you recall if you had any feeling at that time  
12 whether there was anything new or different about the way  
13 Mr. Frederiksen proposed to interface the lamps -- the  
14 numerical displays?

15 MR. MacINTOSH: John, you're really going far  
16 afield here, really. I don't see where this question has any  
17 purpose in this deposition of this man. I don't think that's  
18 a proper question, proper subject matter, even, John. I  
19 think you better get back to this declaration. We'll have  
20 to wind it up here. When are you going to ask your last  
21 question on this? Let's get there first. If you can't  
22 get there pretty soon, I'm going to have to go on the airplane  
23 and see the judge or something.

24 MR. LYNCH: That's delightful. Can we go see the  
25 judge in Chicago?

26 MR. MacINTOSH: No problem. You'll have to see him  
27 here, the man is here. San Francisco.

28 Q BY MR. LYNCH: Dr. Tai --

1 MR. MacINTOSH: San Jose.

2 Q BY MR. LYNCH: Dr. Tai, you said that you knew or you  
3 felt at the time when Mr. Frederiksen put Exhibit 1 on the  
4 board, that it was proprietary, right?

5 A From Intel's position, I assumed, yes, it is proprietary.

6 Q What did that mean to you from Intel's position?

7 A That means -- you know, I'm not going to mention to  
8 other customers about Frederiksen, what he's doing, you know.  
9 That's his proprietary information.

10 Q And at the time, do you have any recollection of what  
11 you thought was different or new or proprietary about what  
12 he put on the board?

13 A I don't recall, you know.

14 Q Okay. Now, later, you had a meeting with Atari people,  
15 correct?

16 A (Witness nods head up and down.)

17 Q And that is referred to in Exhibit -- in Paragraph --

18 MR. MacINTOSH: Paragraph 3.

19 Q BY MR. LYNCH: -- 3 of your declaration, right?

20 A Yes.

21 Q Now, who was present at that meeting?

22 A Steve Mayer, Al Alcorn.

23 Q And who else?

24 A Hal Feeney.

25 Q And who else?

26 A And me.

27 Q And anyone else?

28 A No, I don't think so.

1 Q So there was you, Hal Feeney, Steve Mayer and Al Alcorn?

2 A (Witness nods head up and down.)

3 Q That's all; is that correct?

4 A (Witness nods head up and down.)

5 Q Now, what happened at the meeting?

6 A What we did is ask them to tell us, you know, because  
7 they're very secretive about what they're trying to do. And  
8 in order for us to help them, we -- you know, asked them  
9 to give us some general ideas, you know, what kind of  
10 applications they are trying to implement.

11 Q Okay. And what happened then?

12 A And then they told us, you know, about the way they want  
13 to display the things, you know, to register their scores,  
14 and regarding switches and things like that. So, you know,  
15 we more or less know what they're trying to talk about.

16 Q Who knew?

17 A Of course, Hal Feeney and I, you know. We know that,  
18 "Oh, they are--" the kind of applications, you know. "Then  
19 we can tell you how you can use our product to implement  
20 them."

21 Q They didn't tell you what they wanted the Intel micro-  
22 processor for?

23 A No, they didn't exactly.

24 Q What did they tell you specifically?

25 A They tell us suppose they want to display the score,  
26 how do you interphase that with our microprocessor?

27 Q What kind of display?

28 A You know, LED display.

1 Q They said they wanted an LED display?

2 A I don't recall whether they exactly said LED, but they  
3 do want the display. At that time, LED displays used a  
4 lot of power. And you know, people still don't like it  
5 because it's -- you know, not really bright enough, especially  
6 during the daytime, you know. And that has some problem  
7 during that time.

8 Q Do you remember if they told you they were going to use  
9 an LED display?

10 A I don't recall that.

11 Q Do you remember what kind of display they told you they  
12 were going to use?

13 A I don't recall exactly what kind.

14 Q What did you tell them about how to make a numerical  
15 display?

16 A Oh, our general concept usually is, "If you use a  
17 seven segment display, whether it's LED or fluorescent,  
18 you know, all seven segments, then this is the way, you know,  
19 we can help you to achieve the --" you know.

20 Q Now, when you told him that, were you telling him the  
21 standard information that you imparted to many people?

22 MR. KATZ: Objection to the question as indefinite  
23 as to what is standard information.

24 Q BY MR. LYNCH: Were you giving them standard information  
25 that Intel offered to all its potential customers?

26 A Not all the time. Depends on their question, okay?

27 Q We were talking about one specific question, Dr. Tai.  
28 We're talking about the display, okay?

1 A (Witness nods head up and down.)

2 Q And you said you told them if they would use a seven  
3 segment display that you could interface that with the  
4 microprocessor, correct?

5 A Yes.

6 Q Now, when you told them that, was that information that  
7 was standard Intel information that it would give to any of  
8 its customers?

9 A Let me put it this way: There are certain things,  
10 you may call it standard, but there are certain things that  
11 we try to draw out what their unique situation is. Like  
12 seven segment display, let me tell you one case, when you  
13 call standard, the reason it doesn't apply. Suppose they  
14 say, "We want to use a seven segment display." The next  
15 question is, "Do you care how much power you use?"

16 Q Did you ask them that question?

17 A Yeah, you know.

18 Q What did they say?

19 A They say, you know, if they say, "I don't care," I  
20 don't recall what they say. Then we'll say, "You take this  
21 approach." We'll say, "If you don't care, you can use a --"  
22 whatever technique we recommended at that time, or whatever  
23 parts is available at that time. You know, our industries  
24 keep changing.

25 Q I understand.

26 A Then if they have a certain unique situation, then  
27 we'll tell them, you know, "We couldn't hack that power,"  
28 then we show them a different technique.

1 Q You said, "We couldn't hack that power." Is that the  
2 word you used?

3 A Yeah, if they say they couldn't hack that power. Most  
4 engineers use that word.

5 Q I understand. You mean they couldn't use that much  
6 power?

A Yes.

7 Q But you don't remember what their discussion was with  
8 you about the displays?

9 A Not exactly, no.

10 Q Consequently, you don't remember what you told them  
11 about how to interface the displays?

12 MR. KATZ: Objection to the question as mischarac-  
13 terizing his testimony.

14 THE WITNESS: That's not a true statement.

15 Q BY MR. LYNCH: What did you tell them?

16 A If they're so secretive, won't tell it, then we give  
17 them all the alternatives.

18 Q What alternatives did you give them?

19 A You can use a microprocessor output directly, but then  
20 you have to drive more to implement more software, and it  
21 cost you more memories. Now, if you don't do that, if you  
22 use a seven segment out -- you know, outside, using other  
23 parts to drive your display, then you don't have to drive so  
24 much software, then your trade-off is you save some memory.  
25 You know, capacities.

26 Q And at the time that you had this discussion with the  
27 people at Atari, these were two alternatives that were known  
28 to competent microprocessor engineers; is that correct?



1 MR. KATZ: Objection to the question as lacking  
2 foundation, as to what Dr. Tai knows what was known to those  
3 kinds of engineers, and what was meant by those kinds of  
4 engineers and in what industry those engineers would be.

5 MR. LYNCH: I'll rephrase the question.

6 Q BY MR. LYNCH: At the time you told them that, Dr. Tai,  
7 you knew that those were two alternatives that people could  
8 choose for a way to use a display, correct?

9 A Yes.

10 Q And you knew that also before you spoke to Mr. Frederiksen;  
11 isn't that right?

12 MR. KATZ: Objection to the question.

13 THE WITNESS: Yes.

14 Q BY MR. LYNCH: Now, with respect -- and do you have a  
15 recollection, Dr. Tai, about specifically what you did tell  
16 the people from Atari about how to drive their displays,  
17 which alternative you suggested?

18 A I don't recall I suggested any.

19 Q Okay. Now, with respect to the input switches, was  
20 there any discussion with the Atari people that they wanted  
21 to interface input switches with the -- with a microprocessor?

22 MR. KATZ: Objection to the question as being  
23 indefinite.

24 THE WITNESS: I don't recall the details, you know.  
25 I assume we talk about switches, but you know.

26 Q BY MR. LYNCH: But you have no recollection of any  
27 discussion about switches?

28 A Switches, yes.

1 Q Okay. What about switches? What discussion did you  
2 have about switches?

3 A That it is the -- you know, we'll discuss, you know,  
4 what type of switches they're going to use.

5 Q What did they tell you?

6 A I don't recall what they tell us. Then the next thing  
7 we want to talk about switches is what's the noise -- I  
8 mean the debounce problem on the switches, you know, when  
9 you put switches, it bounce. And these are general things  
10 we will ask, because they're not going to tell us how they're  
11 going to do it, you know.

12 Q What did they tell you about any debounce problems they  
13 had with respect to switches?

14 A That means -- you know, when they try to read the input  
15 of the switches, input coming into the microcomputer, they  
16 say, you know, there will be bounces, you know, in certain  
17 switches, and in other switches they don't have bounce  
18 because it's a switch system as compared to a direct  
19 switch contact into the microprocessor. Then we tell them  
20 how to write the software to avoid whatever switches, if  
21 there's a debounce, write the software, how to implement that.

22 Q So your main discussion about switches with the Atari  
23 people was how to debounce switches?

24 A -- I, MR. KATZ: I object.

25 Q BY MR. LYNCH: Is that correct?

26 MR. KATZ: Objection to the question as mischaracter-  
27 izing his previous testimony.

28 Q BY MR. LYNCH: I'm really just trying to find out what

1 it is, Dr. Tai. Your discussion with the Atari people,  
2 with respect to switches, at least involved in part debouncing  
3 the switches?

4 A Yes, in part.

5 Q Okay. A Yes.

6 Q Now, it's a fact that on the MCS-4, the 4004 microcomputer,  
7 you debounce the switches principally by software; isn't  
8 that correct?

9 A By software.

10 Q Okay. Now, what other discussions did you have other  
11 than debouncing switches with the Atari people that had to  
12 do with how to interface switches with the microprocessor?

13 A Oh, the other thing would be very obviously, they will  
14 ask, you know, is how to -- you know, minimize their power  
15 consumption on their switches, because it takes a lot of  
16 power. And so, you know, talking about strobing the switches,  
17 and so these are the general topics.

18 Q Did you tell them that they should strobe the switches?

19 A If they want to reduce the power consumption, yes, I  
20 told them. I don't recall exactly what, because they're not  
21 really telling us fully what they are trying to do, and so  
22 it's -- we really just are giving them general --

23 Q General information?

24 A -- information, kind of general, to respond to their  
25 question. They say, "How do you save power?" Then we'll  
26 respond to their question. "How do you strobe it?" and  
27 we'll respond, "This is the way we think it should be. We'd  
28 like to recommend," you know. "If you have another approach,"

1 you know, "go right ahead."

2 Q Yes, but do you remember specifically what you had  
3 recommended that they do to interface the switches to the  
4 microprocessor?

5 A There are two ways, you see. This way --

6 Q And you're referring to --

7 A -- and the other way is --

8 Q When you say "this way", you're referring to Figure 13  
9 on page 52?

10 A Yeah, this way, because we try to ask them to buy more  
11 parts from us, is to use 4004, shift register. We try not  
12 to say, "I'll recommend another one." They insist, "Do  
13 we have to use your 4004?" then we say, "No," you know, "you  
14 can use other parts to implement." So it's different, you  
15 know. Depends on the case.

16 Q Let me go back, because I got a little confused, Dr.  
17 Tai. In discussing the ways to interface switches with the  
18 microprocessor for Atari, you mentioned the availability of  
19 the technique shown on page 52 of GD-51; is that correct?

20 MR. KATZ: Objection to the question as mischarac-  
21 terizing the statement in terms of technique shown, what is  
22 meant by technique.

23 Q BY MR. LYNCH: I'll call it the arrangement, Dr. Tai.  
24 Let me reask the question. In discussing with Atari the  
25 interfacing of switches to the 4004 microprocessor, one of  
26 the things you discussed was an arrangement or circuit  
27 similar to that shown on page 52 of Exhibit GD-51; is that  
28 correct?

A Yes.

1 Q Now, did you discuss any other potential arrangements  
2 that they might use?

3 A If they don't ask, I won't.

4 Q Yes, but did they ask; do you recall?

5 A Who?

6 Q The Atari people.

7 A Oh, yes, they did.

8 Q And so you gave them a number of different alternatives  
9 that they could use?

10 A Possibly. I don't recall exactly, you know, how many  
11 alternatives did I give. But if they do ask that question,  
12 yes, I did give them some.

13 Q Give them a number of different ways to do it?

14 A (Witness nods head up and down.)

15 Q This is based on your own experience on how to do that?

16 A That's right.

17 Q Now, with respect to the matter of the lamps, did you  
18 understand that the Atari people wanted to light lamps other  
19 than numerical displays with the microprocessor?

20 A Yes, they do have lamps.

21 Q And what did they tell you about lamps?

22 MR. KATZ: Objection to the question as assuming  
23 that they told him anything about lamps.

24 Q BY MR. LYNCH: What, if anything, did they tell you about  
25 lamps?

26 A Don't recall, you know, the lamps, exactly what. I --  
27 you know, to my recollections, it will -- you know, what will  
28 usually happen is the power consumptions of the lamp.

1 Q Uh-huh. And did you tell them about how to handle --  
2 strike that. Is power consumption relatively high of  
3 incandescent lamps? A Yes.

4 Q That's what you indicated previously. Did you indicate  
5 to them how they might solve that problem?

6 A No. Usually, we will recommend, you know, "You have to  
7 pay attention to that part of it," you know.

8 Q It is the case, as you testified previously, Dr. Tai,  
9 that Mr. Frederiksen hadn't told you the way he was going to  
10 do that, either; isn't that right?

11 A Not exactly, yeah.

12 (Whereupon, a discussion was had off the record.)

13 MR. KATZ: Let me enter a belated objection to the  
14 question as being indefinite.

15 Q BY MR.. LYNCH: Now, Dr. Tai, other than interfacing lamps,  
16 numerical displays and switches with the microprocessor,  
17 what did you discuss with the Atari people at this meeting  
18 referred to in Paragraph 3 of the exhibit to your declaration?

19 A Okay. The additional thing, you know, we make this a  
20 technical presentation, then Hal Feeney usually came in with  
21 a little sales pitch on convincing them to buy our develop-  
22 ment system, you know, to begin getting familiar with our  
23 MCS-4, to use it, so they fully understand -- you know,  
24 what we're talking about.

25 Q Now, did Mr. Feeney understand or did you believe that  
26 he knew that they were talking about a pinball machine?

27 A After the meeting, Hal Feeney and I -- you know, just  
28 took a guess. It was probably just another pinball machine,

1 okay? We're not sure, but by the description, you know, the  
2 way they ask the questions, you know. We kind of -- you  
3 know, take a guess on that.

4 Q So you just took a guess that what they were talking  
5 about was pinball? A Yeah.

6 Q Now, did -- prior to the meeting with Atari, did you  
7 discuss with Hal Feeney -- did you have any discussion with  
8 Hal Feeney where you conveyed to him the substance of the  
9 material you had received from Mr. Frederiksen in your earlier  
10 meeting with Mr. Frederiksen?

11 A Yes.

12 Q And what did you tell Mr. Feeney about that?

13 A Usually, I make a trip report every time, regarding  
14 the trip or --

15 Q Uh-huh.

16 A -- telephone call. We usually made a report, and --  
17 you know, to the list of people in the department. Everybody  
18 aware what -- you know, who we are talking to, and those  
19 are the internal memorandum. Those are not outside.

20 Q And in that memorandum or in a discussion with Mr.  
21 Feeney, did you describe to Mr. Feeney the proprietary  
22 things that Mr. Frederiksen told you?

23 A Yes, uh-huh.

24 Q Did you tell Mr. Feeney that those were proprietary  
25 to Mr. Frederiksen?

26 A Yeah. Because he's a marketing guy, he knew, you know.

27 Q So he knew that this was proprietary?

28 A That's right.



1 Q What was Intel's policy at that time insofar as handling  
2 of proprietary information that you might have come in  
3 contact with upon visiting customers?

4 MR. KATZ: Objection to the question, as being  
5 indefinite in the use of certain legal terms, and I don't  
6 know that the witness would understand what the term  
7 "proprietary" meant as distinguished, for example, from  
8 the term "confidential". For example, something could be  
9 proprietary and not confidential. In the sense that some-  
10 thing could be proprietary in that they would own the rights  
11 to it, but there was no confidentiality attached to it. So  
12 I object to the question as lacking foundation, that the  
13 witness understands what the term "proprietary" means as  
14 used by Mr. Lynch.

15 Q BY MR. LYNCH: Let me reask the question, just because  
16 I can't even keep it in mind, Dr. Tai.

17 A Uh-huh.

18 Q At the time you were working for Intel in late '73,  
19 early '74, you were making a lot of visits to customers;  
20 isn't that right? A Uh-huh.

21 Q What was Intel's policy about how you should handle  
22 material that was told to you by customers or potential  
23 customers?

24 A The policy was we won't -- we don't mention any customer  
25 in our discussion with -- you know, while we are talking to  
26 another customer.

27 Q Now, what about the information that you obtained in a  
28 discussion with one customer? What was Intel policy about

1 your telling the information --

2 A When you say obtained, usually it's confidential informa-  
3 tion. We have to sign a disclosure on that information.  
4 Then we cannot release it.

5 Q I see. So did you regard the information that you got  
6 from Mr. Frederiksen as confidential?

7 A Yes.

8 Q Did you sign anything with respect to it?

9 A In this case, no.

10 Q But you felt that you knew it was confidential?

11 A That's right.

12 Q Now, what was Intel's policy about information like  
13 that that was confidential about your handling it with  
14 other customers?

15 MR. KATZ: Objection to the question as assuming  
16 that there's a policy of Intel.

17 THE WITNESS: I already told you about the policy.  
18 Besides that, we consider, you know, if there's no signing  
19 of disclosure, anything like that, and if it's mentioned in  
20 our manual, then we can go ahead and talk about it.

21 Q So if you hear something from Mr. Frederiksen, but the  
22 same thing is mentioned in your manual, then you can go  
23 talk about it?

24 A I need to be more precise. When you say -- you know,  
25 "you hear," suppose like if Frederiksen say, "Please don't  
26 disclose this information," then we will not.

27 Q He didn't say that, though, did he?

28 A Yes, a lot of times he did say that.

1 Q He said that in your meeting with him?

2 A That's right, yeah.

3 Q So did you ever disclose that information that you got  
4 from Frederiksen to anyone else?

5 A Not the proprietary, like he say, "Don't mention to  
6 anybody that," you know, "we are building this machine,  
7 using microprocessor."

8 Q Uh-huh.

9 A Okay. And then we won't say that.

10 Q I know. But did he say that?

11 A Yeah, he did say that.

12 Q He did say that? A Uh-huh.

13 Q Now, did he also -- did you also understand that the  
14 subject matter of the drawing, Exhibit 1, was supposed to  
15 be confidential?

16 A No. If you just show this document, nobody would know  
17 what you're doing.

18 Q So you didn't regard that as confidential?

19 A No. If you just -- you know, I give another engineer  
20 this sheet, it's the same as any system.

21 Q It's just like a lot of other systems; is that right?

22 A That's right. I mean nobody knows what you're doing;  
23 put it that way.

24 Q Well, you can look at a system like that and tell what  
25 an engineer is trying to convey, can't you, Dr. Tai?

26 A Not exactly, because --

27 Q You may not know the application, but you understand  
28 how the microprocessor is hooked up to switches, lamps and

1 displays.

2 A More or less, yeah. Like he didn't put down what  
3 switches it is.

4 Q Right, I understand.

5 A Yeah.

6 Q But you can look at Exhibit 1 to your declaration and  
7 understand that it's some type of a system and how whatever  
8 the system is is hooked up to a microprocessor.

9 A That's right.

10 Q Now, when Mr. Frederiksen placed the drawing that is  
11 Exhibit 1 on the board, Dr. Tai, did he tell you that that  
12 drawing was proprietary?

13 A I don't recall that.

14 Q Or that -- or did he instruct you that you should keep  
15 that confidential?

16 A I don't recall he say that or not.

17 Q Fine. Now, in your discussions with the Atari people,  
18 did you put -- did you draw out any systems for them?

19 A Discussion with the Atari --

20 Q Atari people. A Yes.

21 Q What drawings did you make for them?

22 A Oh, you know, like the standard (indicating), you know,  
23 switch. Because if you're just showing switches, it doesn't  
24 -- the engineer goes, "Yeah, I know what a switch is," then  
25 how, what to do. Then we go through the program, you know,  
26 the instruction, how you get this out, you know, some logic  
27 signals, and you know, go into more details.

28 Q Now, the -- when you said -- when I asked you if you

1 had made any drawings, you said yes, and you pointed to  
2 Figure 13 on page 52 of GD-51, did you not?

3 A Which drawing?

4 Q That's this (indicating).

5 A Yeah, I don't make the exact drawing.

6 Q But a drawing of that nature.

7 MR. KATZ: Objection to the question as indefinite  
8 as to what is meant by "that nature".

9 Q BY MR. LYNCH: Is that correct?

10 A I don't recall exactly, but I do some drawing, you know,  
11 try and explain our system.

12 Q Let me put it this way: Would it be fair to say that  
13 the drawings that you made for the Atari people were drawings  
14 that you regarded as disclosed in the manual, the Intel manual?

15 MR. KATZ: Objection to the question as to whether  
16 or not he formed any conclusion as to the nature of the  
17 drawings that he drew at that time.

18 THE WITNESS: Some in the manual, you know. If  
19 it is applicable to the customer.

20 MR. LYNCH: Right.

21 THE WITNESS: We will -- you know, there are a  
22 lot of drawings, you know. I don't think it is in the manual.

23 Q BY MR. LYNCH: I understand. Do you remember what draw-  
24 ings you did tell the Atari -- make for the Atari people at  
25 the meeting referred to in Paragraph 3?

26 A There's a standard drawing, I would say like our CPU  
27 chips, you know. Then where to put the outputs.

28 MR. KATZ: Can we borrow this a second to look at

1 it? You're referring to this exhibit?

2 MR. LYNCH: No, I need it.

3 MR. SCHNAYER: Can I look? I haven't seen the  
4 exhibit. I want a chance to look at it.

5 MR. LYNCH: Let me say something. You fellows  
6 can look at it, we can suspend the deposition, you can take  
7 a look at it, if that's what you want to do. But I need it  
8 for my examination.

9 MR. SCHNAYER: Okay, I would like to look at it,  
10 and I'll let you have it back. Do you want to stop a minute?

11 MR. MacINTOSH: We'll take a break.

12 MR. SCHNAYER: Take a break.

13 MR. LYNCH: How long is it going to take?

14 MR. SCHNAYER: A few minutes. I want to see what  
15 you have here.

16 MR. MacINTOSH: I'll run out and get some junk food.

17 MR. LYNCH: No, I'll go to another thing. We'll  
18 have to get off this for a moment, Dr. Tai. You'll excuse  
19 me for getting off it.

20 Q BY MR. LYNCH: Now, did Mr. Feeney at any time -- did  
21 you tell the people of Atari any of the information that you  
22 understood that Mr. Frederiksen wanted you to maintain as  
23 confidential?

24 A I don't think I told Atari people.

25 Q Now, did Mr. Feeney in any way encourage you to make  
26 any disclosures to them of material that Mr. Frederiksen  
27 regarded as confidential?

28 A No.

1 Q Was the meeting that you had with the Atari people  
2 similar to meetings you had had with other customers in  
3 order to acquaint them with the capabilities of your micro-  
4 processor?

5 MR. KATZ: Objection to the question as indefinite  
6 as to what is meant by similar.

7 THE WITNESS: The format is the same.

8 Q BY MR. LYNCH: Was the nature of the disclosures that you  
9 made to those people similar to disclosures you made to  
10 other customers to assist them in using the Intel micro-  
11 processor?

12 A The general information, yes.

13 Q Now, did you impart any specific information to them  
14 which was exactly what Frederiksen had told you?

15 A I don't think so.

16 MR. LYNCH: I don't have any further questions.

17 MR. KATZ: We'll have some cross examination, but  
18 we would like to have a short recess before we do it.

19 THE WITNESS: Okay.

20 (Whereupon, a discussion was had off the record.)

21 MR. LYNCH: Let me just finish up, Dr. Tai. One  
22 wrap-up question.

23 Q BY MR. LYNCH: You indicated that you hadn't conveyed to  
24 the Atari people the specific information that Mr. Frederiksen  
25 told you.

26 A Not to disclose, uh-huh.

27 Q Right. Now, did you -- when you executed your affidavit,  
28 did you intend to convey the idea that you had disclosed to



1 Atari the information specifically that Frederiksen disclosed  
2 to you?

3 A Rephrase the question again, please.

4 Q When you executed the declaration here --

5 A Uh-huh.

6 Q -- with Exhibit 1 attached, did you intend to convey  
7 in that declaration that you did tell the Atari people the  
8 specific arrangement that Mr. Frederikson had informed you  
9 about earlier?

10 A I -- the only thing I recall -- let me answer it this  
11 way -- is I did not disclose the specific application,  
12 because that's the thing Bally don't want, is to apply the  
13 microcomputer to a pinball machine. Okay? That one, no.  
14 The other, you know, talking about general things, switches,  
15 strobing, and things like that --

16 Q You did disclose -- you did talk about general things,  
17 as you would talk to any customers?

18 A Switches, display, that's right, uh-huh.

19 Q Now, Dr. Tai, two other questions. At any of the times  
20 other than at your deposition when you spoke to the Bally  
21 attorneys, was Mr. MacIntosh present?

22 A In general, yes, Mr. MacIntosh.

23 Q Now, I also asked you in the break, Dr. Tai, if we  
24 asked you if this came to trial, if this case comes to trial,  
25 and we asked you whether you would be available to come to  
26 Chicago if you were suitably compensated for your time and  
27 travel, you know, just to cover your expenses and make sure  
28 that you weren't damaged by the --

1 A Uh-huh.

2 Q -- exercise, might you be willing to come.

3 A I would consider, yeah.

4 Q If your schedule permits you to come.

5 A Permits me to do so, yeah.

6 MR. LYNCH: I don't have any other questions.

7  
8 EXAMINATION BY MR. KATZ:

9 Q Dr. Tai, referring to the declaration that you signed  
10 on July 17, 1981, and in Paragraph 3, you stated that after  
11 the meeting with Frederiksen, which you refer to in Paragraph  
12 2, but within two months of the meeting, you were present at  
13 a meeting at Intel in Santa Clara, California, with Jesse  
14 Huffman and Hal Feeney of Intel, and Steve Mayer and Al  
15 Alcorn of Atari. Do you recall whether Jesse Huffman was  
16 present at that meeting for any portion of the time?

17 A The initial portion is Jesse, you know, took them to  
18 Intel, drove them to Intel. And in many cases, and this is  
19 one of the cases, that the customer requests that because  
20 it is proprietary, so Jesse -- you know, should not be  
21 included in the meeting, okay? So Hal Feeney agreed, so --  
22 and so he was not in the meeting.

23 Q Now, at this meeting that you refer to with Hal Feeney,  
24 Steve Mayer and Al Alcorn, you stated that it was within two  
25 months of the meeting with Frederiksen. Now, do you have any  
26 recollection as to when this meeting occurred, for example  
27 with respect to the end of 1973 or with respect to the  
28 Christmas Holiday of '73 or any specific point of reference?

1 A I couldn't recall, you know, exactly.

2 Q But do you have any belief as to when it occurred?

3 A I would say sometime between the end or early -- you  
4 know, end of '73 or early '74.

5 Q Do you think that it could have occurred before Christmas,  
6 1973?

7 A It could, yeah.

8 MR. LYNCH: Objection, it's hypothetical.

9 Q BY MR. KATZ: And the meeting with Frederiksen, do you  
10 have any recollection as to whether that occurred prior to  
11 Christmas of 1973?

12 A Yeah, it's prior.

13 Q It was prior to Christmas?

14 A Prior to Christmastime. As I mentioned before, you  
15 know, it's '73 or '74. But according to what I'm -- the  
16 information now, yes, it's prior to Christmas.

17 Q Going on with your statement in Paragraph 3 of your  
18 declaration, you stated that during the meeting, Steven  
19 Mayer and Al Alcorn explained to you that they were contem-  
20 plating working on a game using the MCS-4 microcomputer chip  
21 set, and they asked you to explain to them how to connect  
22 the MCS-4 to the game. You stated also that although they  
23 did not specifically tell you what game they contemplated  
24 designing with the MCS-4, from their description of the  
25 components of the game and from their questions, you readily  
26 ascertained at the meeting that they were contemplating  
27 designing a pinball machine.

28 Now, on direct examination, you said in response to a

1 question of Mr. Lynch, I believe, that you guessed that they  
2 were intending to design a pinball machine. But did you  
3 really believe -- were you pretty sure in your mind that that's  
4 what they were intending to do?

5 A Yeah.

6 MR. LYNCH: Objection, leading.

7 THE WITNESS: I believe so, okay. Hal Feeney and  
8 I believed what we -- you know, they were doing a pinball  
9 machine.

10 Q BY MR. KATZ: It was your belief --

11 A That's right.

12 Q -- that they were doing a pinball machine; is that  
13 correct?

A Yeah.

14 Q Now, at the time that they were discussing this subject  
15 with you at the meeting, did you have any recollection in  
16 your mind -- do you recall that you had anything in your mind  
17 as to the meeting that you had had previously with Frederiksen?

18 MR. LYNCH: Objection, the question is vague --

19 THE WITNESS: Would you rephrase that question?

20 MR. LYNCH: -- and impossible.

21 Q BY MR. KATZ: Do you recall whether you had the meeting  
22 with Frederiksen in mind and his discussions about pinball  
23 machines at the time that you met with the Atari people and  
24 heard their questions?

25 A After I heard their questions? Yes, I -- I don't  
26 recall exactly, but I should say yes, I -- you know, in the  
27 back of my mind, I am thinking about that.

28 Q Was that other meeting with Frederiksen just within a

1 relatively short time before this meeting?

2 A That's right, it -- you know. That's what lead me to  
3 believe, you know, that Atari is doing a pinball machine.

4 Q Going on in Paragraph 3 of your declaration, you  
5 stated, "I told them at the meeting how to interconnect the  
6 components of the game to the MCS-4 microcomputer chip set,  
7 using a matrix multiplexing technique which was similar to  
8 the matrix multiplexing technique Jeffrey Frederiksen had  
9 disclosed to me in connection with a pinball machine at  
10 my meeting with him in Milwaukee," which you refer to in  
11 Paragraph 2.

12 In response to Mr. Lynch's questions, which were  
13 generally limited to what was discussed, did you, in fact,  
14 make any drawings for the Atari people at that meeting?

15 A I didn't -- if the word "made" implied give them some  
16 documents, no.

17 Q No, excuse me. I don't want to confuse you with the  
18 word "drawings" either. Did you make or draw any sketches,  
19 like on a blackboard or on tablets or anything of that nature?

20 A Yes, I did.

21 Q And did you make any drawings on a blackboard?

22 A Yes, I did.

23 Q And were the drawings -- did you make a single drawing  
24 for them?

25 A No, several drawings, you know, because on a blackboard,  
26 you can't draw a CPU, you know, in such a long fashion. And  
27 what I did is very similar to that type of drawing that you  
28 see on that page.

1 Q By "that page", you mean attached to your declaration?

2 A Attached to my declaration, yes.

3 Q Uh-huh. And in the drawing, did they -- they wanted  
4 you to show them how to connect the digit displays to a  
5 microprocessor chip, the 4004; is that correct?

6 A Yes, uh-huh.

7 Q How about lamps, did they ask you to disclose lamps?

8 A Uh-huh, yes.

9 Q Were they particularly concerned with incandescent  
10 lamps, do you recall?

11 MR. LYNCH: Objection, leading.

12 THE WITNESS: I don't recall, but I think they're  
13 talking about one of those other lamps.

14 Q BY MR. KATZ: Incandescent lamps?

15 A Incandescent, yes.

16 MR. LYNCH: Objection, leading.

17 Q BY MR. KATZ: Did the discussions -- excuse me, strike  
18 that. Did you have any discussions with Mayer and Alcorn  
19 concerning the drawings or the sketches that were made on the  
20 board?

21 A On the board, yes, I was talking to him.

22 Q Did they make any drawings on the board, or were the  
23 drawings just made by you?

24 A Just made by me.

25 Q Did the drawings include some kind of contact switches?

26 A Yes, that I drew, the contact switches.

27 Q And do you have any -- strike that. Did you have any  
28 discussions or indicate to them any problems that they

1 might have concerning debounce problems with contact switches?

2 A Yes.

3 Q And did you generally explain, at least in your own  
4 mind, some attempt -- some ways of trying to cure those  
5 problems?

6 A Yes. Usually, we have a special routine, you know,  
7 developed for -- you know, special cases of what switches  
8 they use. And they will follow the software that will  
9 teach them how to write a portion of it.

10 Q And did you have any discussions with them concerning  
11 possible noise, noisy switches?

12 A Yes, uh-huh.

13 Q And did you have any suggestion to them about how to  
14 cure those problems? A Yes.

15 Q And were those suggestions with respect to noise based  
16 in any way on your discussions that you had with Frederiksen?

17 A Oh, some of them, yeah.

18 Q And what were -- do you recall what some of those were?

19 A The main thing is the debounce, you see, switches  
20 always have one end will debounce when you push, and when  
21 you release it also have debounce.

22 Q Uh-huh.

23 A But in between, a pretty long time now, they're pretty  
24 flat, the signal.

25 Q Did Mr. Frederiksen indicate to you there might be  
26 technically serious problems in pinball machines with  
27 debounce?

28 MR. LYNCH: Objection, leading.



1 A Yes.

2 Q With respect to the incandescent lamps, did you indicate  
3 anything to the Atari people concerning any possible  
4 problems in driving incandescent lamps with the 4004 micro-  
5 processor?

A Yes, yes.

6 Q Had you had a discussion about that kind of problem or  
7 the possibility of that kind of problem with Frederiksen  
8 at the previous meeting?

9 A Yes.

10 MR. LYNCH: Objection, leading. You took the  
11 affidavit, Mr. Katz. I mean, you could ask him about the  
12 affidavit.

13 MR. MacINTOSH: I think, John, some of his ques-  
14 tions go to your examination.

15 MR. LYNCH: Let's let the judge worry about it.

16 MR. MacINTOSH: I think your objection was as to  
17 relevancy.

18 MR. LYNCH: No, I said leading. I didn't say  
19 relevancy.

20 MR. MacINTOSH: Okay.

21 MR. LYNCH: I'm not arguing about relevancy.

22 MR. MacINTOSH: Uh-huh. Just leave that objection  
23 on the record.

24 Q BY MR. KATZ: In connection with the incandescent lamp  
25 problems that you discussed with the Atari people, do you  
26 recall what you discussed?

27 A Oh, the main thing is the lamps, you have to apply a  
28 high voltage to the lamps. And that induces a tremendous

1 amount of noise to the MOS port. So how they are going to  
2 take care of it, you know. And we just draw their attention  
3 to it.

4 Q And was it your view at the time that you had the  
5 discussion with the Atari people that if it wasn't handled  
6 properly, maybe it wouldn't work?

7 A Yeah, that's right.

8 Q Do you recall that either Mayer or Alcorn indicated  
9 any skepticism to you that perhaps this wouldn't -- this  
10 system wouldn't work in the kind of game that they were  
11 talking about?

12 MR. LYNCH: Objection, hearsay.

13 THE WITNESS: When they first came in, they show  
14 that kind of skepticism. And so we have to do -- you know,  
15 usually, a lot of customers did that. The problem is  
16 because they didn't know how to handle those microcomputers.

17 Q Did you feel at that meeting that you had to do a real  
18 selling job on these people?

19 A That's right.

20 Q Had you ever been shown any system, any microprocessor  
21 system for a pinball machine before seeing the blackboard  
22 drawings that Frederiksen showed you at your meeting with  
23 him in Milwaukee? A No.

24 Q Have you ever seen one since?

25 A Yes.

26 Q And where was that?

27 A That's from the Frederiksen system.

28 Q Oh, Frederiksen system?

1 A Yeah.

2 Q He showed you a drawing, or the blackboard drawing;  
3 is that what you're referring to?

4 A Yeah, the blackboard drawings.

5 Q After that meeting and after your meeting with the Atari  
6 people, have you ever seen any system -- electronic system  
7 for -- specifically for a pinball machine?

8 A Yeah, you know, in the later years.

9 Q Later years?

10 A Yes, yeah. Everybody is having that pinball machine,  
11 you know, in the show like the CES Shows in Las Vegas, I  
12 went there practically every year. You know, you saw some  
13 of those.

14 Q When was that, 1977 or so, 1978?

15 A Yeah, '77, '78, '79. Bally had a big booth, I remember.

16 Q At your meeting with Frederiksen in December of '73,  
17 when he --

18 MR. LYNCH: Objection.

19 Q BY MR. KATZ: At the end of '73 --

20 MR. LYNCH: Or early '74.

21 Q BY MR. KATZ: -- or early '74. Well, I think the witness  
22 has said that his best recollection is that it was in  
23 December of '73, before Christmas; is that correct?

24 A That's right.

25 MR. LYNCH: Is that your --

26 THE WITNESS: (Nods head up and down.)

27 MR. LYNCH: Would you go back and read the testimony?

28 I think he said it was late '73 or early '74.

1 MR. KATZ: I think he was talking about the Atari  
2 meeting; is that right?

3 THE WITNESS: Yes, you asked me the Atari meeting.

4 MR. KATZ: I think you'll find that that should  
5 be in the record.

6 MR. LYNCH: I think you'll find it otherwise.

7 MR. KATZ: Okay. Well, I understood that that was  
8 how the witness was answering. But we can check on the record.

9 Q BY MR. KATZ: But now it is your recollection that the  
10 meeting with the Atari people that we have been talking  
11 about, Mayer and Alcorn, that occurred late in '73 or early  
12 '74?

13 A That's right.

14 Q December of '73 or January of '74; is that right?

15 A That's right.

16 MR. LYNCH: Objection, that's also leading the  
17 witness. That's not what the witness said earlier.

18 Q BY MR. KATZ: All right. Now, the meeting with Frederiksen,  
19 what was your best recollection as to when that meeting  
20 occurred, the first meeting with Frederiksen? That was --  
21 it was my understanding that that was in December of '73,  
22 before Christmas; isn't that what you testified to?

23 A Yes, right.

24 Q Okay. Now, I forget what I was getting at. At that  
25 meeting with Frederiksen, was it your impression when he  
26 made the drawing on the blackboard that he was all excited  
27 about this idea?

28 MR. LYNCH: Objection.

1 Q BY MR. KATZ: Did he seem excited about it?

2 MR. LYNCH: That's hearsay.

3 THE WITNESS: Yeah, he's excited about the ideas.

4 Q BY MR. KATZ: I'm talking about your impression.

5 A Yeah.

6 Q Your recollection of your impression at that time.

7 A (Witness nods head up and down.) Yes.

8 MR. LYNCH: The same, hearsay, unless you want to  
9 explain the relevance of his excitement.

10 Q BY MR. KATZ: Now, in -- you indicated that he indicated  
11 that you should keep certain things confidential; is that  
12 correct?

13 A Uh-huh, yes.

14 Q Now, was there anything that he indicated -- did he  
15 limit that area of what you should keep confidential?

16 A Yes.

17 Q Okay. Now, is my understanding correct that he asked  
18 you to keep confidential the fact that he was working on a  
19 microprocessor pinball machine?

20 A Yes, uh-huh. The applications of microprocessor in a  
21 pinball machine.

22 Q So when you made your drawing or the sketch on the  
23 blackboard to the Atari people --

24 MR. LYNCH: Objection, the witness said he made a  
25 number of sketches.

26 Q BY MR. KATZ: When you made the number of sketches on  
27 the blackboard to the Atari people, you felt you didn't know  
28 for sure that they were doing a pinball machine, is that right,

1 so you felt that you could make those drawings; is that correct?

2 MR. LYNCH: Objection, leading.

3 THE WITNESS: Why don't you rephrase your question.

4 MR. KATZ: Okay. Would you read the question back.

5 (Whereupon, the record was read by the reporter.)

6 THE WITNESS: Initially, yes. I mean, until I  
7 fully -- they keep giving me information bit by bit, bit  
8 by bit. Initially, you know, we don't know what the whole  
9 machine -- what the whole application is.

10 MR. KATZ: Uh-huh.

11 THE WITNESS: And so we keep drawing questions from  
12 them, you know, how -- you know, "What else do you want to  
13 implement, using this microprocessor?" So step by step, they  
14 give us what they want to do, what they want to do.

15 Q BY MR. KATZ: So is it correct that like at this meeting,  
16 you might go to a blackboard. You ask a question, you start  
17 drawing?

18 A That's right.

19 Q You ask another question and draw some more?

20 A That's right.

21 Q Pretty soon, you have a whole drawing or sketch on the  
22 blackboard; is that right?

23 A That's correct, that's correct.

24 Q And just to make sure that I understand it, that it's  
25 clear, the Exhibit 1 that is attached to your declaration,  
26 the drawing that you referred to in your declaration was  
27 very similar to one of the drawings -- at least one of those  
28 drawings that you made for the Atari people; is that correct?

1 A Yes.

2 Q Now, as between these various drawings that you made,  
3 did they indicate any preference of one kind of thing versus  
4 another?

A No.

5 Q Now, referring to this drawing, Exhibit 1, which I will  
6 show -- you have it in front of you, okay. Now, you indi-  
7 cated, I believe, in your testimony in response to Mr.  
8 Lynch's questions that Mr. Frederiksen made this drawing,  
9 as far as you can recall, on the blackboard. And but there  
10 were some things that you specifically told him to put on  
11 here, or how to put on the drawing; is that correct?

12 A Yes.

13 Q Now, you were referring to this block, this oblong --

14 A 4004 CPU.

15 Q -- on the left-hand side, which is labeled 4004 CPU,  
16 right?

17 A That's right.

18 Q Now, specifically, you do recall specifically what  
19 you told him? In other words, specifically, of the things  
20 that are shown here, you, for example -- you told him --  
21 you said in your testimony that this word "control logic"  
22 that was --

23 A You know, mentioned through, he just put it in the block.

24 Q Frederiksen wrote that in there?

25 A Right.

26 Q Did he write "Intel MCS 4004"?

27 A That's right.

28 Q Did you tell him to write that in?



1 A No.

2 Q Did he write "CPU"?

3 A Yes.

4 Q Did you tell him to write that in?

5 A No.. He just wrote it, is that all right as far as you

6 Q Did he write "ROM"?

7 A He wrote that.

8 Q Did you tell him to write "ROM"? in your mind that you

9 A No. But we have been discussing with him and

10 Q And how about the same for "RAM"?

11 A All the things that show on the block, he wrote it.

12 Q Did you tell him to write "In" for these terminals,  
13 for the bottom two lines?

14 A Yeah. I didn't tell him to write on the blocks, but  
15 I showed those things on the blackboard. a couple of figures.

16 Q Oh, you showed him on the blackboard?

17 A On the blackboard. Then he wrote out those.

18 Q Correct me if I'm wrong. You said, "You have to have  
19 input terminals."

20 A That's right.

21 Q "You need so many output terminals."

22 A That's right.

23 Q And so on; is that the kind of thing?

24 A That's right.

25 Q I see. Now, he already had drawn this decoder, right?

26 Is that correct?

27 A That's right.

28 Q And is it your impression from that meeting that he

1 already knew the hardware system that he wanted to use?

2 A Yes, yes.

3 MR. LYNCH: Objection, hearsay, and objection,  
4 hypothetical.

5 Q BY MR. KATZ: Now, is there any doubt at all that you  
6 had this meeting with Frederiksen and these things occurred?

7 A No doubt.

8 Q Okay. Is there any doubt at all in your mind that you  
9 had the meeting we have been discussing with Mayer and  
10 Alcorn?

11 A I have no doubt.

12 Q I only have a couple more questions. Let me have a  
13 short break to see what my co-counsel has to say.

14 A Okay.

15 Q And then I think we'll wrap it up in a couple of minutes.

16 MR. LYNCH: Unless I have more questions.

17 MR. KATZ: Of course.

18 MR. LYNCH: Which I will.

19 MR. KATZ: Fine.

20 (Whereupon, a discussion was had off the record.)

21 MR. KATZ: We have no further questions on cross.

22  
23 FURTHER EXAMINATION BY MR. LYNCH:

24 Q Dr. Tai, we have got to go over some things, because  
25 I -- first of all, let's get down to the meeting, Dr. Tai,  
26 about the first meeting with Mr. Frederiksen. Now, originally,  
27 when I took your first deposition, you said you had a very  
28 hard time placing exact dates. And at that time, because

1 of the weather, I refer you to page 12, near the bottom of  
2 the page, the last answer.

3 A Yes.

4 Q You placed the first meeting with Mr. Frederiksen in  
5 September.

6 MR. KATZ: Objection to the question as mischaracter-  
7 izing the previous testimony.

8 Q BY MR. LYNCH: September time frame.

9 MR. KATZ: Okay.

10 Q BY MR. LYNCH: Now, the fact of the matter is, Dr. Tai,  
11 isn't it the case that you really have no better way now of  
12 placing the meeting any time other than the September time  
13 frame than the weather?

14 MR. KATZ: Objection to the question --

15 Q BY MR. LYNCH: Isn't that correct?

16 MR. KATZ: -- as leading.

17 THE WITNESS: The better way to assess this is to --  
18 looking back at the Frederiksen's notes, you know. I mean  
19 the diagrams that we have.

20 Q BY MR. LYNCH: Well, do you know when Mr. Frederiksen  
21 actually drew the diagram, Exhibit 1?

22 A Not exactly.

23 Q I mean you know that he didn't draw it back in 1973, he  
24 drew that only recently. Did they tell you that, the Bally  
25 lawyers?

A No.

26 MR. KATZ: Objection to the question as to what is  
27 meant by "that".

28 Q BY MR. LYNCH: Well, I mean were you under the impression,

1 Dr. Tai, that Exhibit 1 attached to your declaration is a  
2 copy of a circuit from Mr. Frederiksen's notebook, dating  
3 back to 1973 or thereabouts?

4 A I assume it -- you know, came from his notebooks.

5 Q From back around that time period?

6 A Yeah, I assume so.

7 Q And that's the assumption that you came up with as a  
8 result of your discussion with the Bally lawyers?

9 A No. I did look at the diagrams.

10 MR. KATZ: Objection to the question as lacking  
11 foundation.

12 Q BY MR. LYNCH: I show you, Dr. Tai, that it's dated July  
13 of this year. It is my understanding that that drawing was  
14 not made until July of this year, Dr. Tai.

15 A Whose signature is this?

16 Q I believe that's Mr. Frederiksen's initials made in  
17 July of this year.

18 A Is that the date that he gave it to them or --

19 Q I think it's the date that he made it.

20 MR. KATZ: Objection to the question as indefinite  
21 as to when you're referring to the drawing as to when it was  
22 originally made on the blackboard and the reproduction of  
23 the drawing.

24 Q BY MR. LYNCH: I'm talking about this sketch attached to  
25 your affidavit, it was made in July of 1981.

26 MR. KATZ: Object to the question as indefinite  
27 and lacking foundation.

28 MR. MacINTOSH: This seems peculiar here, John,

that both the sketch, Exhibit 1, is dated 7/17/81, and the declaration itself is dated July 17th, 1981. I don't think you mean to imply Dr. Frederiksen and Dr. Tai were sitting together in a room on July 17, '81, and all this was done at the same time.

MR. LYNCH: But this was done by Mr. Frederiksen recently.

MR. MacINTOSH: Work on establishing what the 7/17 refers to.

MR. KATZ: I believe this is Dr. Tai's initial on the bottom, and this was dated July 17, 1981, because that's when this affidavit was made, and in fact, in the declaration, it specifically refers to the drawing -- let's see, where does it refer to the drawing?

MR. LYNCH: All right.

MR. KATZ: It says "and bearing my initials," so apparently Dr. Tai forgot --

THE WITNESS: Yeah, that's my initials.

MR. KATZ: This is his initial, and it was dated to identify this particular sketch and not any other sketch that goes with this particular declaration.

Q BY MR. LYNCH: But it's true that Mr. Frederiksen made this sketch sometime this year; isn't that right?

MR. KATZ: Yes. And it was made as a reproduction of the earlier blackboard drawing that was referred to in the Frederiksen affidavit.

Q BY MR. LYNCH: I understand. But it was your impression that this came out of Mr. Frederiksen's notebook; is that

1 correct, Dr. Tai?

A Yes.

2 Q Now, and when I say that, I mean Exhibit 1 attached to  
3 your declaration. You thought that sketch came out of his  
4 notebook; isn't that correct?

5 A Yes, it is --

6 Q Now, we were also talking about you said you had a  
7 belief when you spoke to the Atari people that they were  
8 talking about a pinball machine.

9 A Yes.

10 Q Did you discuss that with Mr. Feeney?

11 A Yes.

12 Q Did he have -- what did he say?

13 A He had the same impression.

14 Q Now, how would Mr. Feeney have known about pinball  
15 machines, and the -- how would he have picked up the  
16 signal that this was a pinball machine that Atari was talk-  
17 ing about, if you know?

18 A Because I talked to him before.

19 Q Now, at the conclusion, the Atari people never told you  
20 it was a pinball machine, correct?

21 A The Atari people didn't, huh-uh.

22 Q And they did tell you that they had switches, correct?

23 A Uh-huh.

24 Q And they told you --

25 MR. KATZ: That's a yes?

26 Q BY MR. LYNCH: Is that?

27 A Yes, yes.

28 Q And they told you that they wanted some kind of a

1 numerical display --

A Yes.

2 Q -- interfaced with it? And they told you that they  
3 wanted some lamps interfaced with the microprocessor?

4 A Yes.

5 Q And you knew that Atari was in the game business, right?

6 A Yes.

7 Q And you knew that they had made other arcade games,  
8 right?

A Yes.

9 Q All right, now, the -- when they were telling you this,  
10 did you put a -- and you say you put drawings on the board,  
11 did you ever put a drawing on the board like Mr. Frederiksen's  
12 drawing?

13 A Yes, very similar to those.

14 Q And when you did so, was it your impression you were  
15 giving away any confidential information of Mr. Frederiksen?

16 A No.

17 Q Did you understand that you were doing something Mr.  
18 Frederiksen didn't want you to do?

19 A No.

20 Q Now, did you also believe that you were giving away any  
21 design that wasn't within the capability of Intel engineers?

22 MR. KATZ: Objection to the question as calling  
23 for an expert opinion as to what was within the capability  
24 of Intel engineers and what information they would have at  
25 the time that they would make such a --

26 MR. LYNCH: I withdraw the question.

27 Q BY MR. LYNCH: Did Mr. Frederiksen put this drawing on  
28 the board?



1 A No, he didn't put it on the board.

2 Q Mr. Frederiksen didn't put this on the board, Exhibit 1  
3 to your declaration?

4 A He did it in his own drawing, not on the board.

5 Q When you put it on the board with the Atari people,  
6 you didn't think you were revealing anything of Mr.

7 Frederiksen's invention, did you?

8 MR. KATZ: Objection to the question as lacking  
9 foundation, not establishing what, if anything, Mr. -- Dr. Tai  
10 thought was an invention or whether Frederiksen's work was  
11 an invention or anything else. Object to the question as  
12 totally lacking foundation.

13 Q BY MR. LYNCH: I want to go into, Dr. Tai, the fact that  
14 you had a policy at Intel not to reveal information disclosed  
15 to you by one customer to another, right?

16 A The portion that they stated, you know, that, "This  
17 is confidential." In Frederiksen's case, they just don't  
18 want us to tell -- because -- they just don't want us to  
19 tell that they used microprocessors to implement -- in the --

20 Q Pinball?

21 A -- pinball machine.

22 Q Now, it's the case that there were articles out prior  
23 to the time that you went and saw Mr. Frederiksen that said,  
24 "Use microprocessor for pinball," aren't you aware of that?

25 MR. KATZ: Object to the question as lacking founda-  
26 tion that he was aware of any articles.

27 MR. LYNCH: I'm asking him that.

28 MR. MACINTOSH: I don't think it bears on his line

1 of testimony whether it was or was not out. The importance  
2 is that Frederiksen told him not to reveal the use of micro-  
3 processors on pinball machines, and he respected that,  
4 evidently.

5 Q BY MR. LYNCH: And you have no -- as far as what Mr.  
6 Frederiksen sketched on the board and is in Exhibit 1, you  
7 didn't regard that as -- you regarded you could tell anyone  
8 about that kind of arrangement in a microprocessor?

9 A As far as like keyboards.

10 Q Okay.

11 A General technique in keyboards, you know.

12 Q Well, that means that the general techniques set forth  
13 in Exhibit 1 was more or less standard at the time, for  
14 keyboards or other types of devices; isn't that correct?

15 MR. KATZ: Objection to the question as indefinite,  
16 in that whether he means that this type is ambiguous, this  
17 type referring to keyboards and what keyboards and what  
18 particular types. He's calling for this witness to give  
19 expert opinions here, which we object to very strenuously.

20 MR. LYNCH: We're talking about facts, Dr. Tai.  
21 Don't want any opinions.

22 THE WITNESS: Yeah, at that time, like strobing  
23 on switches like that. It's not what I call -- you know, at  
24 that time everybody knows how to use it, okay?

25 Q BY MR. LYNCH: But you knew how to use it?

26 A Yes.

27 Q And you knew even before you discussed it with Frederik-  
28 sen, right?

1 MR. KATZ: Objection to the question as calling  
2 for an opinion, expert opinions from this witness, as to  
3 what people knew at various times without establishing that  
4 this man formed an opinion at that time, and therefore can  
5 testify with respect to that opinion as a fact, that is that  
6 the opinion he had at that time was such and such.

7 MR. LYNCH: Mr. MacIntosh, I'm going to beg your  
8 indulgence. I was controlled. This -- that was not an  
9 opinion question.

10 MR. MacINTOSH: No. At that time, I can't see how to follow

11 MR. LYNCH: And please tell your client that I'm  
12 not asking an opinion question.

13 MR. MacINTOSH: What is the original question?  
14 I wonder if I could have that back. In that case, yes. He --

15 MR. LYNCH: I can ask it again.

16 MR. MacINTOSH: Let's see what it is on the record.

17 (Whereupon, the record was read by the reporter.)

18 MR. LYNCH: Is that okay?

19 MR. MacINTOSH: Uh-huh, yes. Yes.

20 Q BY MR. LYNCH: Now, you see, Dr. Tai, let me just explain  
21 to you a moment. The suggestion is being made -- well, let  
22 me not go into that. I will only get a diatribe. I apologize.

23 As you indicated, Exhibit 1 to your declaration, Dr.  
24 Tai, shows interfacing an MCS-4004 with switches, digits  
25 and lamps. And insofar as it's concerned, just the pure  
26 circuit without knowing what it is supplied to, those  
27 techniques for interfacing a microprocessor with switches,  
28 lamps and digits was something that was known to you prior

1 to the time you had the meeting with Mr. Frederiksen, right?

2 MR. KATZ: Objection to the question as indefinite  
3 as to what you mean, as to what you're specifically referring  
4 to in that question.

5 MR. MacINTOSH: Do you understand the question,  
6 Dr. Tai?

7 THE WITNESS: Yes.

8 MR. MacINTOSH: Would you answer it.

9 THE WITNESS: I have to answer yes or no in a  
10 sense, because going back to that time, I can't really fully  
11 recall how really familiar with -- we know the strobing  
12 scheme, but we haven't seen a lot of applications on the  
13 microprocessor, because it just came out. You know, we can  
14 suggest a certain way of doing it. In that case, yes. We --  
15 you know, preconceive a certain way of applying the micro-  
16 processor.

17 Q BY MR. LYNCH: And as a matter of fact, as of the time  
18 that you had spoken to Mr. Frederiksen, you, in fact, had  
19 interfaced the microprocessor, or had worked in specific  
20 systems, hadn't you?

21 MR. KATZ: Objection to the question as indefinite.

22 THE WITNESS: Not really.

23 Q BY MR. LYNCH: Not pinball, any type of system. You were  
24 familiar that a microprocessor had been used on some sorts  
25 of systems before that?

26 MR. KATZ: Objection, lacking foundation that this  
27 witness actually ever designed or did a particular applica-  
28 tion.

1 MR. MacINTOSH: I think that this line of examina-  
2 tion --

3 MR. LYNCH: All right, I'll get at it. Mr.  
4 MacIntosh, if you really believe that I'm abusing the witness  
5 and Mr. Katz is not, I mean --

6 MR. MacINTOSH: Your original line of examination  
7 is what went on to --

8 MR. LYNCH: I'll abandon that. The objections are  
9 -- all right.

10 Q BY MR. LYNCH: Let's get then when you wrote your  
11 affidavit, you didn't mention anything about making a drawing  
12 for the Atari people, did you, Dr. Tai?

13 A No.

14 Q Now, did you recall at the time -- did you really  
15 make that drawing, the same as Exhibit 1, for the Atari  
16 people?

17 A I believe so, because otherwise, I -- you know,  
18 without that drawing, we don't know how to talk about it.  
19 It has to have that drawing.

20 Q It has to have that drawing?

21 A You know, a similar type of drawing.

22 Q I'm not talking about a similar drawing. I'm talking  
23 about that drawing, Dr. Tai, that exact drawing.

24 A Some portion of it, yes. Exactly, you know, like out-  
25 put to seven segment. That you cannot change.

26 Q Yes, but that's standard, isn't it, Dr. Tai?

27 MR. KATZ: Objection to the question as  
28 indefinite as to what is standard and when.

1 Q BY MR. LYNCH: Output to a seven segment display.

2 A I mean they are parts, yes. That's standard parts,  
3 seven segment.

4 Q Dr. Tai, if at the time -- well, at the time you had  
5 this meeting with Atari, you either knew or didn't know that  
6 Mr. Frederiksen had made a unique circuit -- or let me ask  
7 you this: At the time you met with Atari, did you have a  
8 belief in your mind as to whether Frederiksen had a unique  
9 circuit to interface the MCS-4 to a pinball game?

10 A Before I met him?

11 Q No. At the time you met with the Atari people,  
12 did you have any belief as to what the merit of the Frederiksen  
13 circuit was?

14 A At the beginning of the meeting, I don't know, but  
15 after the meeting, then I knew what he is doing.

16 Q Okay. You knew what he was doing?

17 A Yeah.

18 Q Now, if this was a special circuit of Mr. Frederiksen,  
19 didn't you know you shouldn't be telling it to other people?

20 MR. KATZ: Objection to the question as mischarac-  
21 terizing and being argumentative, leading.

22 THE WITNESS: Not in -- not in the sense of the  
23 general -- you know, application of microcomputer. Because  
24 we have to tell every customer how to do it a certain way.  
25 But what we try to avoid in each discussion is a specific  
26 application. That's proprietary to our customer.

27 Q BY MR. LYNCH: So the circuit wasn't proprietary?

28 MR. KATZ: Objection to the question as



1 mischaracterizing.

2 THE WITNESS: Depends on what portion.

3 Q BY MR. LYNCH: Was any portion of the Frederiksen circuit,  
4 when he showed it to you, that you regarded as proprietary  
5 to him?

6 MR. KATZ: Objection to the question as being  
7 misleading and mischaracterizing, because it takes something  
8 which is in its entirety and breaks it into parts. That's  
9 where the problem is, the answers become nonresponsive to the  
10 question.

11 MR. MacINTOSH: Do you understand the question,  
12 Dr. Tai?

13 THE WITNESS: Yes.

14 MR. MacINTOSH: Can you answer it?

15 THE WITNESS: Yes. In certain -- in certain  
16 portions, like this strobing, the other customer may not  
17 choose to use that strobing technique. And that might be  
18 unique to Frederiksen's system. Now, we didn't know many  
19 others.

20 Q BY MR. LYNCH: The thing is is there any part of this  
21 circuit, Exhibit 1 to your declaration, that Mr. Frederiksen  
22 put on the board that you regarded as proprietary to Mr.  
23 Frederiksen?

24 MR. KATZ: Objection to the question.

25 THE WITNESS: Not on the diagram.

26 Q BY MR. LYNCH: Okay. And so when you had the discussion  
27 with the Atari people, you formerly indicated that you were  
28 doing what you normally do with customers.



1 A Yes.

2 Q Help them interface the MCS-4 to their problem, whatever  
3 it is, right?

A Yes.

4 Q And that's what you were doing with the Atari people,  
5 correct?

A Yes.

6 Q And that was your job to do that with customers, was it  
7 not?

A Yes.

8 Q And at that time, you didn't specifically give any  
9 information that Frederiksen gave to you to the Atari people?

10 MR. KATZ: Objection to the question as being  
11 conclusionary as to what information he got. He's already  
12 said the opposite, that some of the information that he got  
13 from Frederiksen was given to the Atari people. And so I  
14 can't see how you could ask that question like that.

15 THE WITNESS: Yeah, let me repeat that thing,  
16 as to the -- you know, information which is proprietary,  
17 which is not proprietary. The proprietary information is  
18 concerning the applications.

19 Q To pinball?

20 A To pinball.

21 Q Purely and simply that was proprietary at that time?

22 A That was proprietary. But implement to switches and  
23 how to use the MCS-4 depends on -- you know, the particular  
24 unique -- the customer may come up and say, "Hey, this is  
25 our own way of doing it." Then we accept it. But in a  
26 diagram like that, no.

27 Q In the diagram Exhibit 1, there is nothing proprietary  
28 that you saw?

1 A No, because it's standard.

2 Q Let me ask you this, Dr. Tai: You talked about  
3 debounce problems, and the debounce problems, when I asked  
4 you the first time, you said all those are software implementa-  
5 tions, correct?

6 A We recommend software implementation.

7 Q That's the way you do it with the MCS-4?

8 A MCS-4, because we want you to buy more parts.

9 Q And you told Frederiksen the same thing, that that's  
10 the way he would get debounce, his debounce solution; isn't  
11 that right?

12 MR. KATZ: Objection to the question.

13 THE WITNESS: I don't know, you know, don't recall  
14 exactly, you know.

15 Q BY MR. LYNCH: Well, did Frederiksen tell you anything  
16 that you passed on to Atari about how to debounce switches?

17 A No.

18 Q Okay. And now, there -- at any time did Mr. Feeney  
19 ever say to you that he believed that the people in Milwaukee  
20 were unlikely to be able to build a pinball machine, and  
21 that based on that, you ought to encourage Atari to develop  
22 a pinball machine as opposed to Mr. Frederiksen?

23 A I recall vaguely that he did mention that, you know, to  
24 me, because we are biased, and because -- you know, the local  
25 company, it's much easier to take care of.

26 Q Now, did you feel that way yourself?

27 A In certain respect, yes.

28 Q You felt that Atari was more capable of --

1 A From -- you know, from the people we talked to.

2 Q And when you talked to Mr. Mayer, did you -- had Mr.  
3 Mayer had any previous experience with microprocessors, to  
4 your knowledge?

A No.

5 Q He had none?

A No.

6 Q How about Mr. Alcorn, did he have any experience with  
7 microprocessors?

8 A I don't think so. I don't think so. He may have read  
9 a lot, you know, of information. But really, how to imple-  
10 ment it, no.

11 Q Did you ever meet Mr. Bushnell at Atari?

12 A I don't recall.

13 Q Did these people have any -- you say they had no  
14 experience with microprocessors prior to that time, to your  
15 knowledge. I'm talking about anybody's microprocessor.

16 A I don't know other people, but not really how to --  
17 how to implement, you know, in their system.

18 Q I'm not talking about the specific system. Did they  
19 have any games that you knew of where they were using  
20 microprocessors?

21 A I don't think so.

22 Q You never heard of the games Computer Space and Pong?

23 A Later, later, yes, yes.

24 Q That was later, after your meeting with Frederiksen;  
25 is that your recollection?

26 A Yeah. It would be -- you know, I don't know exactly  
27 what the year is. That Pong game, we have one in the company.  
28 But you know, not at Intel. You know, later -- like in

1 '75-'76, when you mentioned that name.

2 Q So it's your recollection that games like Pong came  
3 along after you had your first meeting with Frederiksen?

4 A Yeah, I would -- I believe so.

5 Q And that Atari had never made a Pong game before you  
6 had your discussion with Mr. Mayer?

7 A No. Because when I was at Fairchild, that's the time  
8 I was involved in Atari's Pong game. So that has to be  
9 later. See, there are a lot of technical talking about these  
10 games. But really, nobody -- you know, had implemented those  
11 things at that time.

12 Q Now, did Mr. Feeney -- Mr. Feeney, what was his rela-  
13 tionship to you at Intel?

14 A I'm in charge of the engineering. He's in the marketing.

15 Q Uh-huh. Now, did Mr. Feeney, according to you -- well,  
16 strike that. At the time of your meeting, did Mr. Feeney  
17 understand that -- let me put it this way: Did Mr. Feeney  
18 know during -- strike that, too. When you had the meeting  
19 with Mr. Alcorn and Mr. Mayer and Mr. Feeney at Atari --

20 A At Intel.

21 Q No -- was it at Intel?

22 A At Intel.

23 Q Let me start over, then. Mr. Feeney knew as well as  
24 you did, did he not, the policies of Intel with respect to  
25 handling information of customers?

26 A Yes.

27 MR. KATZ: Objection to the question as to this  
28 witness's knowledge of what Mr. Feeney knew or didn't know.

1 Q BY MR. LYNCH: And insofar as you knew, Mr. Feeney never  
2 encouraged anybody like you to violate the confidence of a  
3 customer, did he?

4 MR. KATZ: Objection to the question as very  
5 leading.

6 THE WITNESS: In general, yes.

7 Q BY MR. LYNCH: He did encourage you to violate Intel  
8 policy?

9 A No, no. I'm saying that to implement that policy, not  
10 to violate it, you know.

11 Q Now, you also said that the people at Atari were very  
12 skeptical. A Yes.

13 Q About what were they skeptical?

14 A They were skeptical regarding really whether MCS-4,  
15 you know, that people talk so much about, can really do the  
16 job for their game.

17 Q Did they have another microprocessor in mind?

18 A I don't know, but that's what -- you know, they were  
19 skeptical about.

20 Q So they weren't skeptical that a microprocessor would  
21 work, they were just wondering whether the MCS-4 would be  
22 satisfactory?

23 MR. KATZ: Objection as mischaracterizing what  
24 the witness said. He specifically stated that he didn't  
25 know whether they had another microprocessor in mind. He  
26 just merely said that they were skeptical.

27 THE WITNESS: They were skeptical.

28 Q BY MR. LYNCH: About the Intel product?

1 A Right.

2 Q That's all you know, they were skeptical about whether  
3 the Intel product was as good as it was cracked up to be?

4 A The particular microprocessor we're talking about.

5 Q The MCS-4? A Yeah.

6 Q You said you discussed with the Atari people noisy  
7 switches.

8 A I recall, yeah.

9 Q Now, what did they say to you and what did you say to  
10 them about noisy switches?

11 A In general, I would make a statement saying that --  
12 you know, some engineers even may not know -- they may  
13 know. You know, it depends how familiar they are with the  
14 switches. That usually we assume that the switches has a  
15 noise during the -- when you push it, during the first --  
16 you know, five millisecond time, bounce, you know, about  
17 five --

18 Q Uh-huh.

19 A And then we just tell them how to overcome that five  
20 millisecond of bounce, by writing the MCS-4 software.

21 Q That was software. So in connection with noisy  
22 switches, you weren't telling them anything that Frederiksen  
23 had told you at first?

24 A I don't recall that.

25 MR. KATZ: Objection to the question as indefinite.

26 MR. LYNCH: Pardon?

27 THE WITNESS: I don't recall that I told them,  
28 specifically said Frederiksen -- you know.

1 Q BY MR. LYNCH: Frederiksen didn't tell you how to solve  
2 the problem with noisy switches, you knew that, right?

3 A Yes.

4 MR. KATZ: Objection, mischaracterizing previous  
5 testimony. Also on the basis it was indefinite.

6 Q BY MR. LYNCH: Now, in all the various meetings you had  
7 with the Bally lawyers, Dr. Tai, you have been compensated  
8 for your time; isn't that right?

9 A Yes.

10 Q Now, are there any other relationships between your  
11 company and Bally? A No.

12 Q Or your company and Midway?

13 A No.

14 Q How about Mr. MacIntosh's time, who is compensating  
15 Mr. MacIntosh?

16 A I should be the one that compensate his time, because  
17 I retained Don MacIntosh.

18 Q I understand. A Yes.

19 Q But how much is Bally compensating you for this?

20 A As far as I'm concerned, I am not aware of their  
21 compensation, okay?

22 Q Bally isn't paying you for the time you're spending in  
23 connection with this matter?

24 A I am, yes.

25 Q What I want to know is how much.

26 A Oh, you mean for my time?

27 Q Yes.

28 MR. KATZ: I believe Mr. Tai testified that --



1 MR. LYNCH: I'm asking the witness a question.

2 MR. KATZ: Okay, go ahead.

3 THE WITNESS: Yeah, they are compensating me for  
4 seventy-five dollars an hour.

5 Q BY MR. LYNCH: And this was for the time at the meeting?

6 A Yes.

7 Q And for the time viewing other people's affidavits and  
8 other things like that, correct?

9 A Yes.

10 Q Now, what else did they show you other than the material  
11 that you talked about, the Jesse Huffman affidavit? They  
12 showed you the drawing that you attached to your declaration.  
13 What else did they show you?

14 A That's about it.

15 Q They didn't show you anything else?

16 A No. I don't recall they showed me anything else.

17 Q Do you understand, Dr. Tai, what is going on in this  
18 particular litigation?

19 MR. MacINTOSH: I wonder what the relevance of  
20 that is.

21 MR. LYNCH: I think it has to do with his intent  
22 in the overall deposition. He doesn't or he does. He can  
23 answer it.

24 THE WITNESS: To tell you the truth, I don't know  
25 the overall picture. All I gave is -- you know, on my part  
26 of it, is to give the facts of what I recollect.

27 Q BY MR. LYNCH: You don't know, then, what's going on?

28 A No.

1 Q And now, when is the last time you saw Mr. Frederiksen  
2 or talked to him?

3 A After the meeting that we mentioned, you know.  
4 He talked to me several times on the phone. I didn't, you  
5 know, go back and -- I don't recall now whether I ever did  
6 go back and visit him again.

7 Q You don't recall? A No.

8 Q You haven't spoken to Mr. Frederiksen at the time of  
9 your -- in the last couple of years?

10 A No.

11 MR. LYNCH: I think that about does it.

12 MR. MacINTOSH: Are you pretty near the end?

13 MR. LYNCH: Yes.

14 Q BY MR. LYNCH: At the time you were at Intel, who at  
15 Intel was the person most familiar with the operation of the  
16 MCS-4? You know --

17 A When you say "operation" --

18 MR. KATZ: Objection to the question as indefinite.

19 Q BY MR. LYNCH: Who was the person who knew the most about  
20 how to adapt the MCS-4, how it operated, how you could  
21 apply it?

22 MR. KATZ: Objection to the question as compound  
23 and indefinite and lacking information.

24 MR. LYNCH: I'm asking if he knows.

25 MR. MacINTOSH: If you know.

26 THE WITNESS: I do.

27 Q BY MR. LYNCH: You have the most information?

28 A Yeah.

1 Q You knew more about applications of the MCS-4 than  
2 anyone?

3 MR. KATZ: Objection to the question.

4 THE WITNESS: I would say yes, you know.

5 Q BY MR. LYNCH: Okay. At that time, what applications of  
6 the MCS-4 had you been aware of?

7 MR. KATZ: Objection to the question as indefinite  
8 as to what you mean by "at that time".

9 MR. MacINTOSH: I don't know what the relevance  
10 of that one is, John.

11 MR. LYNCH: Well, he said he didn't remember  
12 earlier. I just wanted to get an idea of what applications  
13 you were aware of.

14 MR. MacINTOSH: Look, this deposition --

15 MR. KATZ: This is also --

16 MR. MacINTOSH: Let me finish, please. This is a  
17 deposition based upon his declaration of July 17, 1981.  
18 And I think you're kind of winding down to the very short  
19 strokes here. I don't think we're going to open it up as  
20 to all the applications Dr. Tai was working on at Intel at  
21 that time. I don't think that's at all relevant. I don't  
22 think you should answer that question.

23 Q BY MR. LYNCH: You're not going to tell me what applica-  
24 tions you were familiar with as of the time you were --

25 MR. MacINTOSH: No, I don't think he's going to  
26 answer that question.

27 THE WITNESS: No.

28 MR. MacINTOSH: You have his qualifications on the

1 record, and I think that's good enough.

2 Q BY MR. LYNCH: Okay. Now, Dr. Tai, insofar as your  
3 testimony is concerned, I asked you if you would be willing  
4 to come to Chicago. Under what conditions would you be  
5 willing to come to Chicago?

6 MR. MacINTOSH: You better negotiate with his  
7 attorney first. That's me.

8 THE WITNESS: Yeah, I said I would consider, you  
9 know.

10 Q BY MR. LYNCH: I just want to know what conditions you  
11 would consider as being appropriate for you to decide to  
12 come.

13 A If I have the time, you know, and probably compensation  
14 for my time.

15 Q Uh-huh.

16 MR. MacINTOSH: I'd probably want to know the scope  
17 of his examination and a list of suggested topics that you  
18 want him to testify to.

19 MR. LYNCH: Same topics.

20 MR. MacINTOSH: Uh-huh. Well, send us a letter,  
21 and I'll give you a reply.

22 MR. LYNCH: I don't have any further questions.

23 MR. MacINTOSH: Okay.

24 MR. KATZ: I have just a few questions. Let me  
25 have a short recess. I have about four questions. Maybe I  
26 won't.

27 (Whereupon, a discussion was had off the record.)  
28

## FURTHER EXAMINATION BY MR. KATZ:

Q Just a couple of questions, Dr. Tai. When you visited Frederiksen in Milwaukee at that first meeting, you went into the facility in which Frederiksen worked; is that correct?

A Yes.

Q What kind of facility was that? What did you see? What kind of facility, was it a new, modern facility?

A No, no, no.

MR. LYNCH: I object. Mr. MacIntosh, let me make a statement. If we start to go into this, we're opening up new areas of examination, where this witness has had time with these lawyers, I'm going to have to pursue it. I would like to tell you now that I do not want to get involved in anything like that. You have been wanting to cut me off. I don't know that this is terribly relevant to anything that's in that exhibit, that declaration.

MR. MacINTOSH: I don't know where the man is going. Where are you going?

MR. KATZ: This is relevant to Dr. Tai's view as to whether or not these people were likely to put this product into commercial -- make a commercial product out of this pinball machine, and I was directing it to the area of inquiry that Mr. Lynch opened up on his last questioning, in connection with the subject matter about the discussion with Mr. Feeney.

MR. LYNCH: I only mentioned the discussion with Mr. Feeney. I once again say to you, Mr. MacIntosh, that if this has anything to do with that declaration, you are

1 applying two standards.

2 MR. MacINTOSH: No, I think you've asked the  
3 question on his last examination here whether he had the  
4 belief with regard to whether Frederiksen would fail, in  
5 those discussions he had with Feeney, whether he'd be  
6 successful or whether Atari would be successful on the project,  
7 whether they should pursue Atari instead of Frederiksen.  
8 As I understand, Mr. Katz asked the question what is the  
9 basis -- what was your factual basis for that opinion or for  
10 that belief, as to whether Frederiksen is going to be  
11 successful or whether they should pursue Atari.

12 Q BY MR. KATZ: Let me limit it to that question. I'll ask  
13 was it your view -- let me start out with that. Was it your  
14 view at the time of the meeting with Frederiksen and of the  
15 meeting with the Atari people that it was not likely that  
16 the Frederiksen people would actually make this product  
17 commercially?

18 A My feeling is that --

19 MR. LYNCH: Objection, leading.

20 THE WITNESS: -- they may not, you know.

21 Q BY MR. KATZ: What was the basis for that feeling?

22 A Because they don't have much operation in Milwaukee.  
23 And you know, it's just a small group of people that --  
24 you know. We don't know what their direction, from a  
25 business standpoint, okay?

26 Q Did you observe any particular facility for manufacturing?

27 A The facility is not what I consider a fancy -- you know.  
28 It's just a very crude building, and there's not much to it,

1 you know. So these are just our feelings, you know.

2 Q Were those feelings based on your observations at the  
3 meeting?

4 A Yes, uh-huh.

5 Q That's the meeting with Frederiksen?

6 A That's right.

7 Q Have you recently reread your declaration of July 17,  
8 1981?

9 A Yeah, I did last night.

10 Q And do you believe that all of the statements made in  
11 that declaration are true?

12 A Yes.

13 MR. KATZ: That's all the questions I have.  
14

15 FURTHER EXAMINATION BY MR. LYNCH:

16 Q Do you also believe, Dr. Tai, that all the statements  
17 made in this deposition are true?

18 A Which deposition?

19 Q This right here today.

20 A Yes.

21 Q And how about all the statements in your prior deposi-  
22 tion, do you believe they were true?

23 A Yes.

24 MR. LYNCH: I don't have any further questions.  
25

26 PHILIP T. TAI  
27 Subscribed and sworn to before me  
28 this \_\_\_\_\_ day of \_\_\_\_\_, 1981.